DOCUMENT RESUME

ED 310 932	SE 050 876

TITLE	NASA and the Educational Community. An Inventory of Programs.
INSTITUTION	National Aeronautics and Space Administration, Washington, DC. Educational Affairs Div.
PUB DATE	Aug 88
NOTE	173p.
PUB TYPE	Reference Materials - Directories/Catalogs (132)
EDRS PRICE	MF01/PC07 Plus Postage.
DESCRIPTORS	College Science; Elementary Secondary Education; *Employment Programs; Higher Education; Institutes (Training Programs); Minority Groups; *Outreach Programs; Public Education; Science Education; Science Interests; *Science Programs; *Science Teachers; *Scientific Enterprise; Scientific Personnel; Secondary School Science; Space Sciences; Workshops
IDENTIFIERS	*National Aeronautics and Space Administration

ABSTRACT

This document describes 162 National Aeronautics and Space Administration (NASA) educational programs. Each program description has been placed in one of five categories based on a dominant feature or program objective. These include: (1) elementary and secondary (59 programs); (2) university (37 programs); (3) minority outreach (30 programs); (4) employment (19 programs); and (5) public education (17 programs). The title, level, brief description, number of participants, cost, organization, and funding organization are listed for each program. An executive summary and an overview are provided for each category. (YP)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

SE

ED310932

NASA and the Educational Community

An Inventory of Programs

Prepared by:
Educational Affairs Division
Office of External Relations
August 1988

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it
☐ Minor changes have been made to improve reproduction quality
- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

SE 050 876

NASA
National Aeronautics and
Space Administration

Washington, D.C.
20546

BEST COPY AVAILABLE

NASA
National Aeronautics and
Space Administration

Washington, D.C.
20546

Reply to Attn of XEU

August 22, 1988

TO: Distribution

FROM: X/Associate Administrator for External Relations

SUBJECT: NASA and the Educational Community: An Inventory of Programs

I am pleased to share with you an inventory of current NASA educational programs compiled by our Educational Affairs Division. One hundred sixty-two programs are described in this inventory: 59 are elementary and secondary programs, 37 are university-focused, 30 are minority outreach programs, 19 are employment programs, and 17 are public education programs. Annually, these programs reach millions of students, teachers, and university faculty, as well as a large proportion of the general population.

While the majority of these programs are administered by the Educational Affairs Division, both at Headquarters and through the Field Centers, many are administered by other staff offices and program offices throughout the Agency. The number and diversity of activities is significant. First, they reflect the fact that NASA is a high-technology research and development agency whose real product is the creation of human knowledge about space science, aeronautics, and technology. Second, these programs reveal NASA's culture and value system which promotes the development of an educated workforce for the future as well as for the present. And third, these activities demonstrate NASA's efforts to fulfill the Agency's statutory requirement to make available to the public, to the fullest extent possible, the findings and results of the work we do.

In sum, many of these educational programs contribute directly to the research mission of the Agency and enable NASA to contribute directly and indirectly to the maintenance of a talent pool of scientists, engineers, technicians, and other professionals needed to help sustain America's leadership role in aeronautics and space.

We hope that this inventory of NASA-supported educationally-oriented programs will serve as a useful reference for understanding and making known to others the contributions that aeronautics and space make to the education community.

Special thanks go to three members of the Educational Affairs Division for their time and diligence in compiling this inventory: Ms. Elaine Schwartz, Ms. Jackie Counts, and, in particular, Ms. Sherri McGee.

H. Hollister Cantus

Table of Contents

Preface. i

Elementary and Secondary Programs
Executive Summary. 3
Overview. 5
Program Descriptions 13

University Programs
Executive Summary 49
Overview. 51
Program Descriptions 57

Minority Outreach Programs
Executive Summary 81
Overview. 83
Program Descriptions 89

Employment Programs
Executive Summary 119
Overview. 121
Program Descriptions 125

Public Education Programs
Executive Summary 141
Overview. 143
Program Descriptions 145

Index 155

PREFACE

Since 1958, the National Aeronautics and Space Administration and the Nation's educational community have forged partnerships to the mutual benefit of all concerned. As a result of these partnerships, over 160 educational programs have been developed that help ensure an adequate pool of talented scientists, engineers, and technical personnel and give young people the opportunity to participate in their country's future.

Some might question NASA's sponsorship of educational programs. However, as a high-technology research and development agency, whose real product is the creation of knowledge about aerospace science and technology, and as an organization where 52% of the 22,000 civil service workforce are engineers and scientists, it is important that the Agency value and promote the development of an educated workforce. NASA's charter under the National Aeronautics and Space Act of 1958 requires the Agency to make available to the public, to the fullest extent possible, the findings and the results of its work. The development of aerospace education programs for the educational community is one of the ways NASA meets that statutory requirement. In so doing, NASA contributes not only to its own workforce, but also to the talent pool that helps to sustain the Nation's leadership role in aeronautics and space.

There is reason, however, for NASA to be concerned about the science and engineering pipeline that is supposed to be supplying the future workforce. All indications are that the science and engineering employment demands of not only NASA, but also the Nation, will significantly increase between now and the year 2000. The following information from the 1987 Science and Engineering Indicators illustrates why there is concern about the United States' ability to meet that demand.

- The number of U.S. citizens earning Ph.D.'s in science and engineering has been declining since 1975.
- Blacks and Hispanics are expected to represent over 40% of the labor force by the year 2000, yet account for only about 2.5% of current scientists and engineers.
- Compared internationally, U.S. high school students perform poorly in science and math. The average Japanese student scores higher in functions and in calculus than the top 5% of U.S. students.
- About 1/2 of all high school science teachers have never had a college course in computer science or calculus.
- If a child has not developed interest in science and math by the third grade, the prospect of doing so diminishes over time.

The Office of External Relations' Educational Affairs Division is the Agency's focal point with the Nation's educational community, and is working, along with other NASA offices, to try to alleviate some of the concerns listed above by providing a wide variety of programs at all levels. Elementary and secondary programs are designed to stimulate young students' interest in mathematics and science and to provide teachers with materials and the motivation to develop those interests. The Educational Affairs Division works with school systems, state boards of education, professional education associations, and private industry, as well as individual students and teachers, in the creation and dissemination of these programs. Along with the Office of Aeronautics and Space Technology and the Office of Space Science and Applications, the Educational Affairs Division also provides the university community with a wide range of programs. These programs, largely designed for the undergraduate and graduate student population, provide opportunities for universities to strengthen their research and educational capabilities and provide NASA with greater research competence.

The Office of Equal Opportunity Programs is working towards eliminating the underrepresentation of women, minorities, and handicapped in the science and engineering workforce. These programs, involving educational institutions, communities, and private industry, are designed to engage and retain larger numbers of underrepresented groups at all levels of the educational system. Programs sponsored by the Office of Management's personnel programs play an important part in attracting the future workforce by providing college students opportunities to work with NASA personnel. Wider audiences are reached through the public education programs sponsored by the Office of Communications. These programs provide general information about NASA and aerospace related topics.

All of these programs are described in detail in NASA and the Educational Community: An Inventory of Programs. This publication, a product of the Educational Affairs Division, Office of External Relations, NASA Headquarters, represents the effort to produce a single document with a brief description of NASA programs that involve students, academic institutions, and/or the general public. Each program description has been placed in one of five categories (Elementary and Secondary, University, Minority Outreach, Employment, Public Education) based on a dominant feature or program objective. One hundred sixty-two programs are described in this inventory: 59 are elementary and secondary programs, 37 are university-focused, 30 are minority outreach programs, 19 are employment programs, and 17 are public education programs. The programs are managed by various organizations at NASA Headquarters and the eight field centers. These include the Headquarters Offices of External Relations, Aeronautics and Space Technology, Space Science and Applications, Equal Opportunity Programs, Management, and Communications, and all NASA field centers - Ames Research Center, Goddard Space Flight Center, Lyndon B. Johnson Space Center, John F. Kennedy Space Center, Langley Research Center, Lewis Research Center, George C. Marshall Space Flight Center, and Stennis Space Center. Most programs are NASA-funded; others rely on the motivation and generosity of NASA personnel who share their knowledge and expertise.

The contents of this report reflect not only the Agency's efforts to fulfill the mandate to involve and inform the educational community about aeronautics and space, but also the efforts to reach out to the community to help develop a population to fill NASA's -- and the Nation's -- future workforce needs.

To help prepare for the future, in 1987, the Educational Affairs Division developed a Five-Year Plan to guide the use of NASA resources in administering a set of aeronautics and space science education programs. The theme and initiatives envisioned in the plan, along with activities of other NASA offices, enable the Agency to contribute directly and indirectly to the maintenance of a talent pool of scientists, engineers, technicians, and other professionals needed to maintain United States' preeminence in aerospace endeavors.

Elementary and Secondary Programs

Elementary and Secondary Programs - Executive Summary

The major goals of the 59 elementary and secondary programs described in this section are to stimulate young students' interest in math and science and to provide teachers with the necessary materials and motivation to develop those interests. The programs range in scope from 3 secondary students involved in the Galileo Summer Fellowship Program to 41,000 teachers and 1.3 million students from all levels participating in various aspects of the Aerospace Education Services Project. Over half the programs described in this section originate from and are run by individual NASA centers. "Outside" organizations such as the National Science Teachers Association, Park Seed Company, and the Maryland State Department of Education collaborate in the management of 13 programs.

Many of the elementary and secondary programs are designed for easy distribution of and access to aerospace educational materials. Programs such as Teacher Resource Centers, satellite broadcasts, and career education programs not only provide a public service, but they also serve as vehicles for the dissemination of information about NASA and the aerospace program.

Almost half of the programs in this section are aimed directly at elementary and secondary students. Programs such as MATHCOUNTS and SSIP provide greater exposure to math and science concepts. Programs such as Engineering and Pre-Engineering not only provide exposure to math and science, but also offer pre-college preparation and skill development.

Teachers are given opportunities to build their math and science knowledge as well as further develop their curriculum materials through programs such as NEWEST, CHROME, and mini-courses taught at the centers. These programs help provide the much-needed resources as teachers attempt to interest more students in science and math.

Further information about the programs described in this section can be obtained from the Headquarters Educational Affairs Division and the Center Educational Program Officers listed below.

NASA Headquarters Educational Affairs Division Code XEE Washington, DC 20546	Dr. Eddie Anderson (202)453-8395
Ames Research Center Mail Stop 204-7 Moffet Field, CA 94035	Mr. Garth Hull (415)694-5543
Goddard Space Flight Center Mail Stop 130.3 Greenbelt, MD 20771	Mr. Elva Baily Mr. Richard Crone (301)286-7207

Jet Propulsion Laboratory Mail Stop 180-205 4800 Oak Grove Drive Pasadena, CA 91109	Mr. Phillip Neuhauser (818)354-8592
Johnson Space Center Code AP4 Houston, TX 77058	Mr. James Poindexter (713)483-8624
Kennedy Space Center Code PA-EAB Kennedy Space Center, FL 32899	Mr. Raymond Corey (305)867-4444
Langley Research Center Mail Stop 154 Hampton, VA 23665-5225	Ms. Mary L. Sandy (804)865-3341
Lewis Research Center Mail Stop 7-4 21000 Brookpark Rd. Cleveland, OH 44135	Dr. Lynn Bondurant (216)433-5583
Marshall Space Flight Center Code CA20 MSFC, AL 35812	Mr. William Anderson (205)544-6527
Stennis Space Center Code CA20 SSC, MS 39529	Dr. Jerry Brown (601)688-1957

ELEMENTARY AND SECONDARY PROGRAMS - OVERVIEW

Activity	Participants	Organization	Level	Cost FY 87	Funding Org.	Notes
Aerospace Education Services Program	41,000 teachers 1.3 million students	all centers and HQ	elem/sec students & teachers	$2.1 million	HQ	
Community Involvement Programs	200,000	all centers and HQ	elem/sec teachers & students	N/A	HQ/EAD	Cost included in AESP budget
Conference and Workshop Support	N/A	all centers and HQ	elem/sec teachers	N/A	N/A	
Educational Conferences	25,000	all centers and HQ	elem/sec teachers	$10,000	HQ/EAD	
Educational Satellite Broadcasts	N/A	all centers and HQ	elem/sec teachers & students	N/A	N/A	
GSFC Film Distrib.	N/A	centers and HQ	elem/sec teachers	$34,125	N/A	
Lunar Sample Education Program	700 schools	all centers and HQ	elem/sec teachers	N/A	HQ/center	Cost included in Teacher Resource Center budget
MATHCOUNTS	10,000 schools	all centers and HQ	elem/sec students	$4,030	HQ	
Materials of Instruction Program	N/A	all centers and HQ	elem/sec teachers	N/A	N/A	

ELEMENTARY AND SECONDARY PROGRAMS - OVERVIEW (cont.)

Activity	Participants	Organization	Level	Cost FY 87	Funding Org.	Notes
Mini-Courses--Secondary School Teachers	N/A	centers only	second. teachers	N/A	N/A	
NASA Orbiter-Naming Program	N/A	all centers and HQ	elem/sec students	$350,000	N/A	
NASA Spacelink	900	centers and HQ	elem/sec teachers	N/A	HQ	
NEWMAST	215	centers and HQ	second. teachers	$279,000	HQ/EAD	In collaboration with NSTA and NCTM
Publications	N/A	all centers and HQ	elem/sec students & teachers	N/A	N/A	
Student Career Educ.	N/A	all centers and HQ	elem/sec students	N/A	N/A	
Student Research Assistance	N/A	all centers and HQ	elem/sec students	N/A	N/A	
Teacher Resource Centers	25,000	centers and HQ	elem/sec teachers	$25,000	HQ	
Teachers' In-service Workshops	41,000	centers and HQ	elem/sec teachers	N/A	HQ	Cost included in AESP budget
Youth Programs and Visits	N/A	all centers and HQ	elem/sec students	N/A	N/A	

ELEMENTARY AND SECONDARY PROGRAMS - OVERVIEW (cont.)

Activity	Participants	Organization	Level	Cost FY 87	Funding Org.	Notes
Adopt-A-School	4,597	MSFC, JPL HQ, GSFC	elem/sec students	N/A	N/A	
Explorer Post Sponsorship	146	LeRC, LaRC JPL, GSFC	second. students	N/A	N/A	
Get-Away-Special	225	LaRC, GSFC	second. students	N/A	N/A	
Mini-Courses--Secondary Students	70	LaRC, GSFC	second. students	N/A	N/A	
NEWEST	100	MSFC, LeRC KSC, LaRC	elem teachers	N/A	N/A	
Planetarium Support	N/A	all centers except JPL and HQ	elem/sec students & teachers	N/A	N/A	
Science & Engineering Fairs	1,680	ARC, MSFC LeRC, KSC LaRC, GSFC and HQ	second. students	$13,802	HQ	
SEEDS Project	45,000	all centers except JPL and HQ	elem/sec students	N/A	N/A	In cooperation with Park Seed Company
Space Science Student Involvement Program	300	all centers except JPL and HQ	second. students	$250,000	HQ	
Telelecture Program	N/A	ARC, MSFC LeRC, LaRC	elem/sec students	N/A	N/A	

ELEMENTARY AND SECONDARY PROGRAMS - OVERVIEW (cont.)

Activity	Participants	Organization	Level	Cost FY 87	Funding Org.	Notes
Childrens Science Conference	500	LaRC	elem students	N/A	N/A	York County, VA Public Schools
CHROME	27	LaRC	elem/sec teachers	$20,000	LaRC/HQ Equal Opport. Prog. Off.	Underrep. Minor. Black: 2 M/13 F Non-Minor.: 3 M/9 F
Comfortable Approach to Teaching Science (CATS)	78	JPL	elem teachers	$150,000	N/A	Funded by National Science Foundation
Computer Bulletin Board System	250/month	LeRC	elem/sec students & teachers	$10,000	LeRC	
Cuyahoga Community College Pre-Engineering	20	LeRC	second. students	$25,306	LeRC & HQ EOP	Underrep. Minor. Black: 4 M/3 F Hispanic: 7M/5 F Native Amer.: 0 M/1 F
Educational Dissertations	1-2/yr	LeRC	elem/sec teachers	N/A	N/A	
Educational Programs for the Handicapped	several thousand per year	LeRC	elem/sec students & teachers	$10-20,000	LeRC & HQ	Braille material and captioned videotapes
Educational Television	N/A	LeRC	elem/sec students & teachers	$60,000	LeRC	Southern Education Communications Association

ELEMENTARY AND SECONDARY PROGRAMS - OVERVIEW (cont.)

Activity	Participants	Organization	Level	Cost FY 87	Funding Org.	Notes
Elem. and Middle School Science Improvement Program	24	MSFC	elem/sec teachers	$38,124	HQ/HQ-EOP	Underrep. Minor. Black: 1 M/6 F Non-Minor.: 0 M/17 F
Engineering & Pre-Engineering	15-20	GSFC	second. students	$40,000	GSFC	Univ. of Maryland Eastern Shore
Exploration Station	112,966	KSC	elem/sec students & teachers	N/A	KSC	Also funded by OSU contract
Galileo Summer Fellowships	3	ARC	second. students	$4,500	ARC	San Francisco section of AIAA
Girl Scouts Program	N/A	KSC	second. students	N/A	N/A	
High School Space and Biology Program	46	ARC	second. students	N/A	N/A	Underrep. Minor. Hispanic: 1 M/1 F Non-Minor.: 28 M/16
Introduction to Space Sciences for Middle School & Junior High School Students	25	GSFC	second. students	N/A	N/A	Maryland State Dept. of Education
JPL/MESA Space Station Competition	18	JPL	second. students	N/A	N/A	Underrep. Minor. Black: 2 M/2 F Hispanic: 7 M/4 F Non-Minor.: 2 M/1 F Funded by State of California Dept. of Education and priv. sector.

ELEMENTARY AND SECONDARY PROGRAMS - OVERVIEW (cont.)

Activity	Participants	Organization	Level	Cost FY 87	Funding Org.	Notes
Math/Science/Business Summer Teacher Prog.	19	JPL	second. teachers	N/A	JPL	Underrep. Minor. Black: 2 M/0 F Hispanic: 2 M/1 F Pacific Island: 0 M/1 F Non-Minor.: 6 M/7 F
NASA Governor's School for the Gifted	24	LaRC	second. students	N/A	N/A	
National Space Club Scholars Program for High School Students	14	GSFC	second. students	N/A	N/A	Underrep. Minor. Hispanic: 0 M/1 F Non-Minor.: 9 M/4 F Funded by National Space Club.
New Horizons Technical Center Mentorship	30-40	LaRC	second. students	N/A	N/A	
New Horizons Vocational Mentorship	10	LaRC	second. students	N/A	N/A	
Physical Science and Engineering Internship for Senior High School Students	24	GSFC	second. students	N/A	N/A	Maryland State Dept. of Education
Science and Mathematics Teaching Resource Center	N/A	JPL	elem/sec teachers	N/A	N/A	Glendale Unified School District

ELEMENTARY AND SECONDARY PROGRAMS - OVERVIEW (cont.)

Activity	Participants	Organization	Level	Cost FY 87	Funding Org.	Notes
Science Connection	16,000	JPL	elem students & teachers	$300,000	N/A	Joint project between Southern California Edison and JPL. Funded by Southern California Edison.
Science Olympiad	250	LeRC	second. students & teachers	$9,000	LeRC	
Special Education Programs	10,000+	LeRC	elem/sec teachers & students	N/A	N/A	
Summer Work Experience Program for Technology/ Vocational Ed. Teachers	36	LaRC	second. teachers	N/A	N/A	
Teacher Conferences and Symposia on Center	1,007	GSFC	elem/sec teachers	N/A	N/A	
Teacher Written Request for Space Information	2,000	GSFC	elem/sec teachers	N/A	N/A	
Technical Opportunities for Peninsula Students (TOPS)	100	LaRC	second. students	N/A	N/A	

Number of Programs 59	Participants 1,830,736 Schools 10,700	Agency-wide 18 Multi-center 11 Single-center 30	Elem. 4 Second. 23 Both 32	Cost $3,732,887 includes $450,000 from outside sources

PROGRAM: Aerospace Education Services Program

LEVEL: Elementary, Secondary Students and Teachers

DESCRIPTION:

The Aerospace Education Services Program provides the professional services of specialists in aerospace education. The specialists are qualified educators who are knowledgeable in aeronautics and the space sciences and are able to effectively communicate past, present, and future NASA activities. The goal is to increase awareness and understanding of scientific research and technological development and their place in the world in which we live. In FY 1987, the program reached more than 41,000 teachers and 1.3 million students. An additional 8.5 million persons were reached by television.

ARC	X	LeRC	X	LaRC	X	JPL	X	GSFC	X
MSFC	X	KSC	X	JSC	X	HQ	X	SSC	X

NUMBER OF PARTICIPANTS: 41,000 Teachers/1.3 million Students

COST (FY 1987): $2.1 million

FUNDING ORGANIZATION: Headquarters

* * *

PROGRAM: Community Involvement Programs

LEVEL: Elementary, Secondary Students and Teachers

DESCRIPTION:

Community Involvement Programs describe a concentration of NASA educational services in a particular community or state. They are planned and implemented at the invitation of and in cooperation with local school districts and community and state leaders. Recent Community Involvement Programs have been held in Conroe, Texas, Phoenix, Arizona, Shreveport, Louisiana, and the entire State of Tennessee.

ARC	X	LeRC	X	LaRC	X	JPL	X	GSFC	X
MSFC	X	KSC	X	JSC	X	HQ	X	SSC	X

NUMBER OF PARTICIPANTS: 200,000

COST (FY 1987): Included in AESP.

FUNDING ORGANIZATION: Headquarters Educational Affairs Division

PROGRAM: Conference and Workshop Support

LEVEL: Elementary and Secondary Teachers

DESCRIPTION:

The Educational Services Offices serve as resources to the educational community within their geographic region. In this role they support technical conferences and workshops, often by planning and developing the programs.

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL X
HQ X
GSFC X
SSC X

* * *

PROGRAM: Educational Conferences

LEVEL: Elementary, Secondary, University Teachers

DESCRIPTION:

NASA conducts or participates in educators' conferences with major national education organizations. We exhibit, provide speakers, and distribute materials at meetings of organizations such as the National Science Teachers Association, the National Congress on Aerospace Education, the American Personnel and Guidance Association, the National Alliance of Black School Educators, and the American Society for Engineering Education. NASA-conducted conferences often concentrate on specialized attendees (e.g., math teachers) and usually include viewing a Shuttle launch/landing or other space-related event.

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL X
HQ X
GSFC X
SSC X

NUMBER OF PARTICIPANTS: 25,000

COST (FY 1987): $10,000

FUNDING ORGANIZATION: Headquarters Educational Affairs Division

PROGRAM: Educational Satellite Broadcasts

LEVEL: Elementary, Secondary Teachers and Students

DESCRIPTION:

Interactive satellite educational broadcasts showing various Center facilities and operations. The broadcast often highlights a program, like Space Station, providing factual information and developing curriculum aids and activities.

ARC	X	LeRC	X	LaRC	X	JPL	X	GSFC	X
MSFC	X	KSC	X	JSC	X	HQ	X	SSC	X

* * *

PROGRAM: GSFC Film Distribution

LEVEL: Elementary and Secondary Teachers

DESCRIPTION:

Film distribution program from the Goddard Space Flight Center services 12 states on the east coast. Films are color 16mm. The majority of the films are loaned to educational facilities, and also are loaned at no cost to civic, professional, youth groups, private industry, etc.

ARC	X	LeRC	X	LaRC	X	JPL	X	GSFC	X
MSFC	X	KSC	X	JSC	X	HQ	X	SSC	X

COST (FY 1987): $34,125

PROGRAM: Lunar Sample Education Program

LEVEL: Elementary, Secondary Teachers

DESCRIPTION:

This program makes lunar samples available to science classrooms throughout the country on a free-loan basis. Borrowers receive six samples of lunar material (three soils and three rocks) encapsulated in a 6-inch diameter clear lucite disk. The disk is accompanied by written and graphic descriptions of each sample in the disk, a film, a sound and slide presentation, a teacher workbook, and additional printed material. These materials are designed to be used as science teaching aids in classrooms.

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL X
HQ X
GSFC X
SSC X

NUMBER OF PARTICIPANTS: 700 schools

COST (FY 1987): Included in Teacher Resource Center

FUNDING ORGANIZATION: Headquarters and Centers

* * *

PROGRAM: MATHCOUNTS

LEVEL: Elementary, Secondary Students

DESCRIPTION:

MATHCOUNTS is a national program for 7th and 8th grade students which offers special coaching in mathematics followed by a series of competitions, concluding with a national competition in Washington. There are both individual and team competitions. The overall goal is to improve math skills and, in some cases, accelerate the development of these skills.

In 1987, NASA awarded a trip to the Marshall Space Flight Center to the top individuals and team coaches.

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL X
HQ X
GSFC X
SSC X

NUMBER OF PARTICIPANTS: 10,000 Schools

COST (FY 1987): $4,030

FUNDING ORGANIZATION: Headquarters

PROGRAM: Materials of Instruction Program

LEVEL: Elementary, Secondary Teachers

DESCRIPTION:

This program is designed to assist elementary and secondary schools, and institutions preparing teachers for these schools, in adopting and updating programs and courses about NASA programs and projects.

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL X
HQ X
GSFC X
SSC X

* * *

PROGRAM: Mini Courses--Secondary School Teachers

LEVEL: Secondary Teachers

DESCRIPTION:

Centers offer courses to local science teachers in conjunction with the State Department of Education. Courses are presented by Center scientists or engineers, covering topics recommended by the State Supervisor for Science.

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL X
HQ
GSFC X
SSC X

* * *

PROGRAM: NASA Orbiter-Naming Program

LEVEL: Elementary, Secondary Students

DESCRIPTION:

The NASA Orbiter-Naming Program offers students, K-12, the opportunity to name the replacement Space Shuttle orbiter. In addition to a name, the competition will include a related classroom project requiring an interdisciplinary team effort. The program is designed to enhance students' interest in and enthusiasm for space exploration and will stimulate their learning in the arts and humanities as well as science and mathematics.

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL X
HQ X
GSFC X
SSC X

COST (FY 1987): $350,000

PROGRAM: NASA Spacelink

LEVEL: Elementary, Secondary Teachers

DESCRIPTION:

NASA Spacelink is a computer data base of space program information designed to be used by teachers, but available nationwide to the general public. In addition to current news and historical information, the data base contains descriptions of suggested concepts using information about the space program. The NASA Spacelink computer is located at the Marshall Space Flight Center, but information for the system is provided by education officers at all NASA centers.

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL X
HQ X
GSFC X
SSC X

NUMBER OF PARTICIPANTS: 900

FUNDING ORGANIZATION: Headquarters

* * *

PROGRAM: NASA Education Workshops for Math and Science Teachers (NEWMAST)

LEVEL: Secondary Teachers

DESCRIPTION:

This is a collaborative effort sponsored by NASA, the National Science Teachers Association (NSTA), and the National Council of Teachers of Mathematics. Outstanding science and mathematics teachers are provided an opportunity to enhance their knowledge of recent technology by attending a 2-week summer workshop at a NASA center. During their stay, the teachers learn new techniques and developments in aeronautics, astronomy, and space science from Center scientists and engineers. They also prepare teacher workshop sessions and public awareness programs.

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL X
HQ X
GSFC X
SSC X

NUMBER OF PARTICIPANTS: 215

COST (FY 1987): $279,000

FUNDING ORGANIZATION: Headquarters Educational Affairs Division

PROGRAM: Publications

LEVEL: Elementary, Secondary, Students and Teachers

DESCRIPTION:

Brochures, pamphlets, fact sheets, lithographs and other publications are printed by the Centers and distributed nationally.

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL X
HQ X
GSFC X
SSC X

* * *

PROGRAM: Student Career Education

LEVEL: Elementary, Secondary Students

DESCRIPTION:

Upon request from a grade school or junior high school, a career presentation is given to students. This is not a program designed for recruitment but solely to inform students of the type of jobs available currently and in the future. It is a program that tries to make what is being taught in the classroom relevant to aerospace careers.

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL X
HQ X
GSFC X
SSC X

* * *

PROGRAM: Student Research Assistance

LEVEL: Elementary, Secondary Students

DESCRIPTION:

Written and telephone inquiries on space science and technology are received daily from students in the United States and various foreign countries. Information specialists in the Public Affairs Offices respond to these and share responsibility for assuring the inquiries are appropriately and efficiently answered.

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL X
HQ X
GSFC X
SSC X

PROGRAM: Teacher Resource Centers

LEVEL: Elementary, Secondary, University Teachers

DESCRIPTION:

Teacher Resource Centers provide educators with copies of video tapes, slides, and publications relating to NASA's research and development programs. They are located at all NASA centers and at 18 regional sites throughout the country.

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL X
HQ X
GSFC X
SSC X

NUMBER OF PARTICIPANTS: 25,000

COST (FY 1987): $25,000

FUNDING ORGANIZATION: Headquarters

* * *

PROGRAM: Teachers' In-service Workshops

LEVEL: Elementary, Secondary Teachers

DESCRIPTION:

The conducting of teacher workshops and courses for pre- and in-service elementary and secondary school teachers is a primary objective of the Aerospace Education Services Project. The objectives and contents of the programs are designed by representatives of school districts, Deans of Schools of Education, and NASA education personnel.

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL X
HQ X
GSFC X
SSC X

NUMBER OF PARTICIPANTS: 41,000

COST (FY 1987): Included in AESP

FUNDING ORGANIZATION: Headquarters

PROGRAM: Youth Programs and Visits

LEVEL: Elementary, Secondary Students

DESCRIPTION:

The Educational Affairs offices conduct or participate in special programs such as orientation courses, model rocketry events, youth seminars, and similar aerospace-related projects. These programs are designed to provide opportunities for youth to be exposed to NASA aeronautics and space-related activities.

ARC X
LaRC X
GSFC X
LeRC X
JPL X
MSFC X
JSC X
SSC X
KSC X
HQ X

* * *

PROGRAM: Adopt-A-School

LEVEL: Elementary and Secondary Students

DESCRIPTION:

This is a national program in which various industries and Government agencies "adopt" a local school and provide tours, briefings, and other educational services. The program aims to develop positive attitudes by introducing students to the relationship between school and the business world. The program also strives to prepare students to cope with the increasing demands and complexities of the world, especially in scientific and technical fields. Examples of NASA participation include judging science fairs, serving as consultants for career days, and exhibiting NASA programs and information.

ARC _____
LaRC _____
GSFC X
LeRC _____
JPL X
MSFC X
JSC _____
SSC _____
KSC _____
HQ X

NUMBER OF PARTICIPANTS: 4,597

PROGRAM: Explorer Post Sponsorship

LEVEL: Secondary Students

DESCRIPTION:

The purpose of the Explorer's Programs, a component of the Boy Scouts of America, is to expose students to careers they might later pursue. Centers sponsor local posts to stimulate the students' interests in science, engineering, mathematics, and technology. Explorers are exposed to the scientific and technical environments at the Centers and are provided actual work experiences and the opportunity to interact with scientists, engineers, and technicians. Posts also conduct lectures, technical projects, field trips, and symposia.

ARC		LeRC	X	LaRC	X	JPL	X	GSFC	X
MSFC		KSC		JSC		HQ		SSC	

NUMBER OF PARTICIPANTS: 146

* * *

PROGRAM: Get Away Special

LEVEL: Secondary Students

DESCRIPTION:

This program is conducted in cooperation with science curriculum specialists and coordinators of the gifted and talented programs in local schools. The Center assembles a team of researchers and engineers to serve as consultants to the student researchers and a "clean room" houses the experiments during the developmental phase.

ARC		LeRC		LaRC	X	JPL		GSFC	X
MSFC		KSC		JSC		HQ		SSC	

NUMBER OF PARTICIPANTS: 225

PROGRAM: Mini Courses - Secondary Students

LEVEL: Secondary Students

DESCRIPTION:

Mini-courses in science and engineering are taught to scientifically gifted students. The courses consist of eight 2-hours sessions per semester. Each session is presented by a Center scientist or engineer. Topics are selected by the State Science Supervisor, the State Director of the Gifted and Talented Program, and the NASA coordinator. Participants are selected by local school districts.

ARC		LeRC		LaRC	X	JPL		GSFC	X
MSFC		KSC		JSC		HQ		SSC	

NUMBER OF PARTICIPANTS: 70

* * *

PROGRAM: NASA Educational Workshop for Elementary School Teachers (NEWEST)

LEVEL: Elementary Teachers

DESCRIPTION:

Similar to NEWMAST, the NASA Educational Workshop for Elementary School Teachers (NEWEST) will be conducted in 1988 at Marshall Space Flight Center, Kennedy Space Center, Lewis Research Center, and Langley Research Center. Twenty-five elementary school teachers from throughout the country will be given the opportunity at each site to interact with NASA scientists and engineers in order to develop science and math lessons based on information about the space program.

ARC		LeRC	X	LaRC	X	JPL		GSFC	
MSFC	X	KSC	X	JSC		HQ		SSC	

NUMBER OF PARTICIPANTS: 100

PROGRAM: Planetarium Support

LEVEL: Elementary, Secondary Students and Teachers

DESCRIPTION:

NASA supports a number of planetaria within the United States providing materials and speakers.

ARC	X	LeRC	X	LaRC	X	JPL		GSFC	X
MSFC	X	KSC	X	JSC	X	HQ	X	SSC	X

* * *

PROGRAM: Science and Engineering Fairs

LEVEL: Secondary Students

DESCRIPTION:

NASA centers offer up to five Certificates of Outstanding Achievement for aerospace-related projects at each of 288 U.S. regional and state science and engineering fairs affiliated with the International Science and Engineering Fair (ISEF). The Center education offices provide additional recognition when possible.

In 1987, two students from each of the affiliated fairs attended the ISEF, at which approximately 250 exhibits were considered for NASA awards. Eight students were awarded a NASA Certificate of Merit and an expense-paid trip to the Ames Research Center with their teachers. Twelve other students received Honorable Mention recognition.

ARC	X	LeRC	X	LaRC	X	JPL		GSFC	X
MSFC	X	KSC	X	JSC		HQ	X	SSC	

NUMBER OF PARTICIPANTS: 1,680

COST (FY 1987): $13,802

FUNDING ORGANIZATION: Headquarters

PROGRAM: Space Exposed Experiment Developed for Students (SEEDS) Project

LEVEL: Elementary, Secondary, University Students

DESCRIPTION:

The SEEDS project is a cooperative venture by NASA and the Park Seed Company. The project involves 12.5 million seeds which were placed in orbit on the Long Duration Exposure Facility (LDEF) in April 1984. When the LDEF is retrieved in July 1989, students from grades five through the university level in approximately 130,000 classrooms will be able to experiment with live materials that have been exposed to the space environment for almost 5 years. These seeds, along with ground-based control seeds, will be distributed with instructional materials to schools across the country.

ARC	X	LeRC	X	LaRC	X	JPL		GSFC	X
MSFC	X	KSC	X	JSC	X	HQ	X	SSC	X

NUMBER OF PARTICIPANTS: 45,000

* * *

PROGRAM: Space Science Student Involvement Program (SSIP)

LEVEL: Secondary Students

DESCRIPTION:

The purpose of this project is to stimulate interest in science and technology by directly involving students in a space research program. Centers support the project by publicizing it within their region and conducting an annual SSIP regional conference for winning semifinalists.

ARC	X	LeRC	X	LaRC	X	JPL		GSFC	X
MSFC	X	KSC	X	JSC	X	HQ	X	SSC	X

NUMBER OF PARTICIPANTS: 300

COST (FY 1987): $250,000

FUNDING ORGANIZATION: Headquarters

PROGRAM: Telelecture Program

LEVEL: Elementary, Secondary Students

DESCRIPTION:

This program provides, through a lecturer and slides, a variety of presentations on space and aeronautics topics to audiences around the Nation.

ARC X
MSFC X
LeRC X
KSC ______
LaRC X
JSC ______
JPL ______
HQ ______
GSFC ______
SSC ______

* * *

PROGRAM: Children's Science Conference

LEVEL: Elementary Students

DESCRIPTION:

In recognition of National Science and Technology Week, Langley Research Center and the York County Public Schools of Virginia have organized this conference for children in grades 4 and 5 and their parents. Similar to an adult conference, the day-long program consists of an opening session, four 45-minute science workshops, lunch, and a keynote speaker at the closing session. The primary goals of the conference are to foster positive attitudes about science and to stimulate natural curiosity about how and why things behave as they do.

ARC ______
MSFC ______
LeRC ______
KSC ______
LaRC X
JSC ______
JPL ______
HQ ______
GSFC ______
SSC ______

NUMBER OF PARTICIPANTS: 500

PROGRAM: Cooperating Hampton Roads Organization for Minorities in Engineering (CHROME)

LEVEL: Elementary and Secondary Teachers

DESCRIPTION:

This program is a 2-week summer workshop designed to improve instruction in specific content areas. The program enables participants to develop new computer-assisted curriculum materials and provides an opportunity to plan in-school projects and offer field trips that provide insight into the engineering profession. During the academic year, participants receive technical assistance to help them implement projects planned during the summer institute; conduct workshops for peers; and organize and run CHROME clubs for students.

ARC _____
MSFC _____
LeRC _____
KSC _____
LaRC X
JSC _____
JPL _____
HQ _____
GSFC _____
SSC _____

NUMBER OF PARTICIPANTS: 27

COST (FY 1987): $20,000

FUNDING ORGANIZATION: Langley Research Center and Headquarters Office of Equal Opportunity Programs

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
2	13									3	9

PROGRAM: Comfortable Approach to Teaching Science (CATS)

LEVEL: Elementary Teachers

DESCRIPTION:

CATS is a joint program of the California State Polytechnic University, Pomona, and the Jet Propulsion Laboratory. Elementary teachers are trained over a year to be "comfortable" in teaching physical science. An intense summer institute is followed up with programs over the full year. The entire program follows the California State science and math frameworks and also is aligned with the six major national textbook series. The program is sponsored by the National Science Foundation.

ARC	____	LeRC	____	LaRC	____	JPL	X	GSFC	____
MSFC	____	KSC	____	JSC	____	HQ	____	SSC	____

NUMBER OF PARTICIPANTS: 78

COST (FY 1987): $150,000

FUNDING ORGANIZATION: National Science Foundation

* * *

PROGRAM: Computer Bulletin Board System

LEVEL: Elementary, Secondary Teachers and Students

DESCRIPTION:

A Computer Bulletin Board is provided as a source of information for area educators and students.

ARC	____	LeRC	X	LaRC	____	JPL	____	GSFC	____
MSFC	____	KSC	____	JSC	____	HQ	____	SSC	____

NUMBER OF PARTICIPANTS: 250/month

COST (FY 1987): $10,000

FUNDING ORGANIZATION: Lewis Research Center

PROGRAM: Cuyahoga Community College Pre-Engineering

LEVEL: Secondary Students

DESCRIPTION:

Volunteer engineers and other business personnel provide tutoring and career information to a culturally and socio-economically diverse group of 8th to 10th grade students from schools surrounding the college. Group process and interpersonal communications exercises are used to develop and sustain student support groups. Site visits to plants and schools of engineering provide information about the profession and requirements for entering the field. Hands-on experiments in CCC's labs are used to develop students' data analysis, graphing, and computer skills. Special sessions and print materials--including Spanish language publications--are used to promote parental understanding and support.

ARC ______
MSFC ______
LeRC __X__
KSC ______
LaRC ______
JSC ______
JPL ______
HQ ______
GSFC ______
SSC ______

NUMBER OF PARTICIPANTS: 20

COST (FY 1987): $25,306

FUNDING ORGANIZATION: Lewis Research Center and Headquarters Office of Equal Opportunity Programs

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
4	3	7	5		1						

PROGRAM: Educational Dissertations

LEVEL: Elementary, Secondary Teachers

DESCRIPTION:

The Lewis Educational Services Office works with master's and doctoral candidates on dissertations relevant to educational activities and programs.

ARC ______
MSFC ______
LeRC X
KSC ______
LaRC ______
JSC ______
JPL ______
HQ ______
GSFC ______
SSC ______

NUMBER OF PARTICIPANTS: 1-2/year

* * *

PROGRAM: Educational Programs for the Handicapped

LEVEL: Elementary, Secondary Teachers and Students

DESCRIPTION:

Braille materials and captioned videotapes related to NASA's programs and activities are made available to all Teacher Resource Centers.

ARC ______
MSFC ______
LeRC X
KSC ______
LaRC ______
JSC ______
JPL ______
HQ ______
GSFC ______
SSC ______

NUMBER OF PARTICIPANTS: Several thousand per year

COST (FY 1987): $10-20,000

FUNDING ORGANIZATION: Lewis Research Center and Headquarters

PROGRAM: Educational Television

LEVEL: Elementary, Secondary Teachers and Students

DESCRIPTION:

Weekly educational television programs are produced at Lewis and distributed by the Southern Education Communications Association (SECA) by means of satellite across the United States. Programs cover a variety of NASA topics and activities. Many of the programs are also copied and made available to Teacher Resource Centers.

ARC ______
MSFC ______
LeRC __X__
KSC ______
LaRC ______
JSC ______
JPL ______
HQ ______
GSFC ______
SSC ______

COST (FY 1987): $60,000

FUNDING ORGANIZATION: Lewis Research Center

PROGRAM: Elementary and Middle School Science Improvement Program

LEVEL: Elementary, Secondary Teachers

DESCRIPTION:

This program is designed to improve teachers' cognitive skills in science areas; to increase the number of science activities included in their classroom instructions; and to impart techniques that can be used to increase their students' interest in math and science.

Presentations are given by local scientists and followup visits to each classroom provide additional technical assistance in science instructions.

ARC _____
MSFC X
LeRC _____
KSC _____
LaRC _____
JSC _____
JPL _____
HQ _____
GSFC _____
SSC _____

NUMBER OF PARTICIPANTS: 24

COST (FY 1987): $38,124

FUNDING ORGANIZATION: Headquarters and Headquarters Office of Equal Opportunity Programs

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
1	6										17

PROGRAM: Engineering and Pre-Engineering

LEVEL: Secondary, University Students

DESCRIPTION:

This program is conducted in cooperation with the University of Maryland Eastern Shore (UMES). It provides selected high school graduates with academic reinforcement during the summer following graduation, tuition assistance for the freshman year, and paid work experience during the summer following their freshman year. Students study at the UMES campus for 2 years and the College Park campus for 3 years to complete requirements for an engineering degree. Another feature of this program is a 9-day residential activity for 10th and 11th graders at UMES. During this period, the students participate in a variety of technical tasks designed to acquaint them with computers and basic engineering principles.

ARC		LeRC		LaRC		JPL		GSFC	X
MSFC		KSC		JSC		HQ		SSC	

NUMBER OF PARTICIPANTS: 15-20

COST (FY 1987): $40,000

FUNDING ORGANIZATION: Goddard Space Flight Center

* * *

PROGRAM: Exploration Station

LEVEL: Elementary, Secondary Students and Teachers

DESCRIPTION:

Space science demonstrations designed to encourage interactive learning and development of critical thinking skills are geared to the student's grade level. Students participate in a variety of hands-on activities utilizing aerospace hardware which complement the teaching of rocketry, human space flight, and space exploration.

ARC		LeRC		LaRC		JPL		GSFC	
MSFC		KSC	X	JSC		HQ		SSC	

NUMBER OF PARTICIPANTS: 112,966

FUNDING ORGANIZATION: John F. Kennedy Space Center and OSU contract

PROGRAM: Galileo Summer Fellowships

LEVEL: Secondary Students

DESCRIPTION:

Galileo fellowships are jointly administered by NASA-Ames Research Center and the San Francisco Section of the American Institute of Aeronautics and Astronautics (AIAA). Top winners are awarded a summer (8-week) job at NASA Ames Research Center.

ARC __X__
MSFC ______
LeRC ______
KSC ______
LaRC ______
JSC ______
JPL ______
HQ ______
GSFC ______
SSC ______

NUMBER OF PARTICIPANTS: 3

COST (FY 1987): $4,500

FUNDING ORGANIZATION: Ames Research Center

* * *

PROGRAM: Girl Scouts Program

LEVEL: Secondary Students

DESCRIPTION:

This work is on-going with the Girl Scouts of America Program. An encampment will be held in the Orlando, Florida area in 1989 and Girl Scouts will participate in programs at Kennedy Space Center.

ARC ______
MSFC ______
LeRC ______
KSC __X__
LaRC ______
JSC ______
JPL ______
HQ ______
GSFC ______
SSC ______

PROGRAM: High School Space and Biology Program

LEVEL: Secondary Students

DESCRIPTION:

The Space and Biology program is targeted for top math and science students from schools within commuting distance from the Ames Research Center. Students spend 6- to 10-hours per week working with a scientist or researcher. In addition they attend a weekly lecture on Monday afternoons. Students are nominated to the program by their high school science departments. Two nominations from each school are accepted.

ARC X
LeRC ____
LaRC ____
JPL ____
GSFC ____
MSFC ____
KSC ____
JSC ____
HQ ____
SSC ____

NUMBER OF PARTICIPANTS: 46

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
		1	1							28	16

* * *

PROGRAM: Introduction to Space Sciences for Middle School and Junior High School Students

LEVEL: Secondary Students

DESCRIPTION:

Sponsored by the Maryland State Department of Education, this program teaches computer programming (BASIC) to students for 2 weeks in the summer. Students are also introduced to space sciences through lectures and field trips.

ARC ____
LeRC ____
LaRC ____
JPL ____
GSFC X
MSFC ____
KSC ____
JSC ____
HQ ____
SSC ____

NUMBER OF PARTICIPANTS: 25

PROGRAM: JPL/MESA Space Station Competition

LEVEL: Secondary Students

DESCRIPTION:

Jet Propulsion Laboratory has assisted the State of California's Math, Engineering, and Science Achievement (MESA) Program at various local high schools and colleges since 1983. The competition is sponsored to strengthen the problem-solving and written-communication skills of participating students through the development of a proposal for use by the NASA Space Station Office. The 1987 competition was won by a team from California State University at Los Angeles for their proposal titled "Production of Immune Agents in Space."

ARC _____
MSFC _____
LeRC _____
KSC _____
LaRC _____
JSC _____
JPL X
HQ _____
GSFC _____
SSC _____

NUMBER OF PARTICIPANTS: 18

FUNDING ORGANIZATION: State of California, Department of Education and private sector

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
2	2	7	4							2	1

PROGRAM: Math/Science/Business Summer Teacher Program

LEVEL: Secondary Teachers

DESCRIPTION:

This program, started in 1983, provides summer work experience for selected secondary school teachers. The purpose is to familiarize these teachers with current trends in technology and research so that they can incorporate this knowledge into their teaching of junior and senior high school students.

ARC	______	LeRC	______	LaRC	______	JPL	X	GSFC	______
MSFC	______	KSC	______	JSC	______	HQ	______	SSC	______

NUMBER OF PARTICIPANTS: 19

FUNDING ORGANIZATION: Jet Propulsion Laboratory

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
2		2	1				1			6	7

PROGRAM: NASA/Governor's School for the Gifted Program

LEVEL: Secondary Students

DESCRIPTION:

The Governor's School is a residential, 6-week summer program designed to provide challenging and enriching real life work experiences for intellectually gifted students. Students are assigned NASA mentors who are responsible for the research or engineering experiences of the student. Work experiences are in a variety of the engineering, physical sciences, or mathematics disciplines. The Hampton City School system provides housing for the students at the Hampton School for the Deaf and Blind, a residential school. The Virginia Department of Education is the program sponsor and provides the students with food, lodging, and evening and weekend activities.

ARC ______	LeRC ______	LaRC X	JPL ______	GSFC ______
MSFC ______	KSC ______	JSC ______	HQ ______	SSC ______

NUMBER OF PARTICIPANTS: 24

PROGRAM: National Space Club Scholars Program for High School Students

LEVEL: Secondary Students

DESCRIPTION:

A student intern program with space scientists and engineers conducted during 6 weeks of the summer for academically talented students who will be entering the junior or senior year of high school. Participants must be U.S. citizens and must have permanent residence within commuting distance of Goddard. The National Space Club provides a small stipend to help with transportation and lunches. Applications are available in early spring from the Space Club or Goddard Space Flight Center.

ARC ____ LaRC ____ GSFC X
LeRC ____ JPL ____
MSFC ____ JSC ____ SSC ____
KSC ____ HQ ____

NUMBER OF PARTICIPANTS: 14

FUNDING ORGANIZATION: National Space Club

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
			1							9	4

PROGRAM: New Horizons Technical Center Mentorship

LEVEL: Secondary Students

DESCRIPTION:

As the adopted school for NASA Langley Research Center, New Horizons Technical Center requires the students to have a mentorship experience in a career field of interest. Each September, 30 to 40 students are placed with Langley Research Center scientists or engineers. From September to June the students spend a minimum of 3 hours per week either with their mentors or conducting research related to their mentorship.

ARC	____	LeRC	____	LaRC	X	JPL	____	GSFC	____
MSFC	____	KSC	____	JSC	____	HQ	____	SSC	____

NUMBER OF PARTICIPANTS: 30-40

* * *

PROGRAM: New Horizons Vocational Mentorship

LEVEL: Secondary Students

DESCRIPTION:

As an extension of the Technical Center program, a mentorship for the vocational students at New Horizons has been instituted. Two students from the vocational areas of electronics, electricity, machine shop, sheet metal, and welding are selected to participate. During a student's final grading period, she or he spends a minimum of 3 times a week and 3 hours each of those days on the job site with his or her mentor.

ARC	____	LeRC	____	LaRC	X	JPL	____	GSFC	____
MSFC	____	KSC	____	JSC	____	HQ	____	SSC	____

NUMBER OF PARTICIPANTS: 10

PROGRAM: Physical Science and Engineering Internship for Senior High School Students

LEVEL: Secondary Students

DESCRIPTION:

Sponsored by the Maryland State Department of Education, this 2-week program exposes students to the engineering profession through lectures and observation in Goddard Space Flight Center laboratories.

ARC _____
MSFC _____
LeRC _____
KSC _____
LaRC _____
JSC _____
JPL _____
HQ _____
GSFC X
SSC _____

NUMBER OF PARTICIPANTS: 24

* * *

PROGRAM: Science and Mathematics Teaching Resource Center

LEVEL: Elementary, Secondary Teachers

DESCRIPTION:

The Teaching Resource Center (TRC) is a joint effort of the Glendale Unified School District, NASA, and Jet Propulsion Laboratory.

The objectives of the SMTRC are to provide a facility and coordinated program that will:

(1) Provide continuous updating in science, math, and technology for current and future teachers in the aerospace sciences;
(2) Provide courses that will allow currently certified teachers to be trained as qualified science and math teachers; and
(3) Motivate educators by means of professional interaction with peers as well as with the scientific and industrial communities.

The courses and training programs emphasize science and mathematics teaching methodology and, when appropriate, high technology content. In addition to the TRC staff, industrial organizations and personnel are invited to participate in the various programs. This participation can be in forms ranging from teacher sponsorships and equipment donations to on-site teacher training.

ARC _____
MSFC _____
LeRC _____
KSC _____
LaRC _____
JSC _____
JPL X
HQ _____
GSFC _____
SSC _____

PROGRAM: Science Connection

LEVEL: Elementary Students and Teachers

DESCRIPTION:

The Science Connection is an educational resource program developed to support and enhance science education for schools within Southern California Edison's service territory. The program is a joint project between Edison and the Jet Propulsion Laboratory with support from NASA.

An important part of the Program is a mobile, high technology classroom. This is custom-designed to make science topics come alive for students. Stereo video equipment, a modern interactive laser disc system, microcomputers and a variety of activities allow students to experience the wonders of science they discuss in class.

ARC ______
MSFC ______
LeRC ______
KSC ______
LaRC ______
JSC ______
JPL __X__
HQ ______
GSFC ______
SSC ______

NUMBER OF PARTICIPANTS: 10,000

COST (FY 1987): $300,000

FUNDING ORGANIZATION: Southern California Edison

* * *

PROGRAM: Science Olympiad

LEVEL: Secondary Students and Teachers

DESCRIPTION:

Lewis Research Center supports the efforts of the Science Olympiad in the Cleveland area. The program encourages teams of students to compete in science-related events.

ARC ______
MSFC ______
LeRC __X__
KSC ______
LaRC ______
JSC ______
JPL ______
HQ ______
GSFC ______
SSC ______

NUMBER OF PARTICIPANTS: 250

COST (FY 1987): $9,000

FUNDING ORGANIZATION: Lewis Research Center

PROGRAM: Special Educational Programs

LEVEL: Elementary, Secondary Students and Teachers

DESCRIPTION:

The Lewis Educational Services Office participates with orchestras, schools, theaters, and museums to co-sponsor educational programs. Some of the programs include Cosmic Concerts, A Midsummer Night's Dream set in space, partnerships in education, and simulated Shuttle missions.

ARC ____
MSFC ____
LeRC X
KSC ____
LaRC ____
JSC ____
JPL ____
HQ ____
GSFC ____
SSC ____

NUMBER OF PARTICIPANTS: 10,000+

* * *

PROGRAM: Summer Work Experience Program for Technology/Vocational Education Teachers

LEVEL: Secondary Teachers

DESCRIPTION:

Local industrial arts teachers are given 1- to 2-week technical assignments in Langley Research Center's fabrication and engineering divisions. Teachers are introduced to technologies which have been developed since they completed their college training. At the conclusion of the program, teachers present a 10-minute presentation describing how they plan to transfer their newly acquired awareness to the classroom.

ARC ____
MSFC ____
LeRC ____
KSC ____
LaRC X
JSC ____
JPL ____
HQ ____
GSFC ____
SSC ____

NUMBER OF PARTICIPANTS: 36

PROGRAM: Teacher Conferences and Symposia on Center

LEVEL: Elementary and Secondary Teachers

DESCRIPTION:

Short (1- to 3-days) programs planned for educators visiting NASA field centers.

ARC ______
MSFC ______
LeRC ______
KSC ______
LaRC ______
JSC ______
JPL ______
HQ ______
GSFC __X__
SSC ______

NUMBER OF PARTICIPANTS: 1,007

* * *

PROGRAM: Teacher Written Request for Space Information

LEVEL: Elementary, Secondary Teachers

DESCRIPTION:

Teachers write for NASA services such as Spacemobile, speakers, and science fair judges. About 2,000 per year write for specific space science information or publications. Some 10,000 brochures and publications are sent out each year to these requestors.

ARC ______
MSFC ______
LeRC ______
KSC ______
LaRC ______
JSC ______
JPL ______
HQ ______
GSFC __X__
SSC ______

NUMBER OF PARTICIPANTS: 2,000

PROGRAM: Technical Opportunities for Peninsula Students (TOPS)

LEVEL: Secondary Students

DESCRIPTION:

Two after school programs are offered each year to high school students in the seven peninsula school districts surrounding Langley Research Center. One program is geared towards aeronautics, and the second towards space. Each program is held for 8 consecutive weeks, 2 hours each meeting. Depending on the program, the students may meet once or twice a week. Each program is problem-centered and requires the students to actively engage in the resolution of the problem. Through such an experience, the students are able to acquire a better appreciation for science, the science process, and the aeronautics and space career fields.

ARC _____ LaRC __X__ GSFC _____

LeRC _____ JPL _____

MSFC _____ JSC _____ SSC _____

KSC _____ HQ _____

NUMBER OF PARTICIPANTS: 100

University Programs

University Programs - Executive Summary

During fiscal year 1987, NASA invested $313,700,000 in grants, contracts, and cooperative agreements at universities, most in the form of research grants. No attempt was made to include descriptions of these instruments in this document. While all grants to universities benefit the institution by expanding their research capabilities and, subsequently, their curriculum, research grants are awarded on the basis of the universities' capabilities to develop solutions to specific mission challenges, and grants are explicit in their requirements. The 37 university programs included in this section, while they also contribute to NASA programs, have been purposefully designed to directly benefit the university through providing education opportunities and through permitting greater flexibility and autonomy in research undertakings.

Most of the programs are designed for the undergraduate/graduate student population and range in size from a single Aerospace History Fellowship to 297 Graduate Student Researchers annually. Twelve of the programs are managed in cooperation with other organizations such as the American Society for Engineering Education, Florida A&M University, and Case Western Reserve University.

In addition to providing NASA with a research base, university programs provide other opportunities to participants besides basic research experience. Many of the programs, such as Graduate Student Researchers, provide the opportunity for students to use the research facilities at NASA centers. Other programs, like the Advanced Design Program, have an undergraduate focus, in an effort to continue feeding the pipeline of future scientists and engineers. Several other programs reach out to diverse populations such as the Resident Research Associateship Program, which accepts foreign nationals; the College Work Study Program for students in need of financial assistance; and the St. Andrews College Program for the Handicapped.

NASA believes that colleges and universities are vital partners with Government and industry in the Nation's aerospace program. NASA's objective is to have these institutions bring their scientific, engineering, and social research competence to bear on aerospace problems and on the broad social, economic, and international implications of NASA's technical and scientific programs. It is expected that, in so doing, universities will strengthen both their research and their educational capabilities to contribute more effectively to the national well-being.

Further information about the programs described in this section can be obtained from the Headquarters Educational Affairs Division and the Center University Affairs Officers listed below.

NASA Headquarters Educational Affairs Division Code XEU Washington, DC 20546	Ms. Elaine T. Schwartz (202)453-8344
Ames Research Center Code ASC Moffet Field, CA 94035	Ms. Barbara A. Hastings (415)694-5802

Goddard Space Flight Center Mail Stop 600 Greenbelt, MD 20771	Dr. Gerald Soffen (301)286-9690
Jet Propulsion Laboratory Mail Stop 900 4800 Oak Grove Drive Pasadena, CA 91109	Dr. Harry Ashkenas (818)354-8251
Johnson Space Center Code AHU Houston, TX 77058	Dr. Stanley Goldstein (713)483-4724
Kennedy Space Center Code PM-TNG Kennedy Space Center, FL 32899	Mr. Dennis Armstrong (305)867-2737
Langley Research Center Mail Stop 105-A Hampton, VA 23665-5225	Dr. Samuel E. Massenberg (804)865-2188
Lewis Research Center Mail Stop 3-7 21000 Brookpark Rd. Cleveland, OH 44135	Dr. Francis Montegani (216)433-2956
Marshall Space Flight Center Code DX01 MSFC, AL 35812	Ms. Ernestine Cothran (205)544-3033
Stennis Space Center Application Research Branch SSC, MS 39529	Dr. Armond Joyce (601)688-3830

UNIVERSITY PROGRAMS-OVERVIEW

Activity	Participants	Organization	Level	Cost FY 87	Funding Org.	Notes
Aerospace History Fellowship	1/year	HQ	grad postgrad	$25,000	HQ	Administered by American Historical Association
Centers for the Commercial Development of Space	16 centers	HQ	grad postgrad faculty	N/A	HQ/Office of Commer. Programs	
College Lectures on Aeronautics and Space Science	N/A	HQ	undergrad grad	N/A	HQ/EAD	Part of AESP program (see elem./sec. section)
Fund for Independent Research; Fund for Innovative Research	N/A	HQ	grad postgrad faculty	$5,000,000	HQ/OAST & OSSA	
Hypersonic Training Grants	3 universities	HQ	grad postgrad faculty	$600,000	HQ/OAST	
In-Space Technology Experiments Outreach Program	11	HQ	undergrad grad postgrad faculty	$1,700,000	HQ/OAST	
Space Applications Program	N/A	HQ	grad postgrad faculty	$2.5 million	HQ/OSSA	
Engineering Student Groups	N/A	all centers and HQ	undergrad	N/A	N/A	

UNIVERSITY PROGRAMS - OVERVIEW (cont.)

Activity	Participants	Organization	Level	Cost FY 87	Funding Org.	Notes
Memoranda of Understanding (MOU) Between NASA Centers and Universities	N/A	all centers and HQ	faculty	N/A	N/A	
Publications	N/A	all centers and HQ	undergrad grad faculty	N/A	N/A	
Clinical and Research Aspects of Aerospace Medicine (Residents)	N/A	KSC, JSC	postgrad	N/A	N/A	
College Work-study Program	22	ARC, KSC, JSC	undergrad	N/A	N/A	
Graduate Program in Aeronautics	100	ARC, MSFC LeRC, LaRC, HQ	grad	$2.5 millon	HQ/OAST	
Graduate Student Researchers Program	297	all centers but KSC and HQ	grad	$4.7 million	HQ/EAD	
Intergovernmental Personnel Act Program	21	all centers except JPL and HQ	faculty	$566,000	NASA-wide	
Joint University Institutes	6 universities	ARC, LeRC LaRC, HQ	undergrad grad faculty	$567,000 plus indiv. research grants	HQ/OAST	

UNIVERSITY PROGRAM - OVERVIEW (cont.)

Activity	Participants	Organization	Level	Cost FY 87	Funding Org.	Notes
Loan of Equipment to Universities	N/A	all centers	faculty	N/A	N/A	
NASA/ASEE Summer Faculty Fellowship Program	200	all centers except HQ	faculty	$2.5 million	HQ/EAD	In cooperation with American Society for Engineering Education
NASA/University Advanced Design Program	32 universities	all centers but SSC & HQ	undergrad grad	$1.4 million	HQ/program offices	Managed by Universities Space Research Association
OAST Centers of Excellence	5 universities	ARC, LeRC LaRC, HQ	grad postgrad faculty	$2 million	HQ/OAST	
OAST Research Institutes	100	ARC, LeRC LaRC, HQ	undergrad grad faculty	$2.25 million	HQ/OAST	
Resident Research Associateship Program	235	all centers except KSC and HQ	postgrad	$12 million	HQ/program offices and centers	Managed by National Research Council
Use of Laboratory Facilities	N/A	all centers	faculty	N/A	N/A	
Associated Western Universities	3	JPL	undergrad grad postgrad faculty	N/A	N/A	Funded by Dept. of Energy

UNIVERSITY PROGRAMS - OVERVIEW (cont.)

Activity	Participants	Organization	Level	Cost FY 87	Funding Org.	Notes
Caltech Summer Undergraduate Research Fellowship (SURF)	36	JPL	undergrad	N/A	N/A	
Case-NASA Cooperative Aerospace R&D Internship/Fellowship Program	175	LeRC	undergrad grad	$820,000	LeRC	In cooperation with Case Western Reserve University
Clinical and Research Aspects of Aerospace Medicine (Medical Students)	N/A	KSC	grad	N/A	N/A	In cooperation with Wright State Univ.
GSFC Film Distrib.	N/A	GSFC	faculty	$34,125	N/A	
Langley Aerospace Research Summer Scholars (LARSS)	65	LaRC	undergrad grad	$201,000	LaRC	
NASA/Virginia Polytechnic Institution and State University Composites	15	LaRC	undergrad grad	$320,000	LaRC	
Planetary Geology Undergraduate Researcher Program	10	JPL	undergrad	N/A	N/A	
Research Affiliates	3	JPL	faculty	N/A	N/A	

UNIVERSITY PROGRAMS - OVERVIEW (cont.)

Activity	Participants	Organization	Level	Cost FY 87	Funding Org.	Notes
San Jose State Univ/ NASA Ames Research and Development Program	130	ARC	undergrad grad postgrad faculty	$400,000	ARC	San Jose State Univ. Foundation administers programs for Ames
Skilled Trades Experience Program	14	JPL	undergrad	N/A	JPL	Underrep. Minor. Black: 1 M/0 F Hispanic: 7 M/0 F N. Amer.: 0 M/1 F Asian: 0 M/1 F Non-Minor.: 4 M/0 F
Space Life Sciences Training Program	36	KSC	undergrad	$66,700	N/A	Black: 3 M/1 F Hispanic: 2 M/1 F Non-Minor.: 10 M/14 F In cooperation with Florida A&M and Bionetics Corporation
St. Andrews College Program for the Handicapped	17	KSC	undergrad	N/A	N/A	Underrep. Minor. Black: 4 M/1 F Non-Minor.: 6 M/6 F
Work Engagement for Scientific Technicians	17	ARC	undergrad	$486,000	ARC	
Number of Programs 37	Participants 1,508 Universities 62	HQ only 7 Multi-center 16 Single-center 14	Undergrad 8 Grad 3 Faculty 7 Mix 19	Cost $40.63 million		

PROGRAM: Aerospace History Fellowship

LEVEL: University - Graduate, Post-doctoral Students

DESCRIPTION:

In order to increase the "talent base" of historians qualified to research and write in NASA history, the NASA History Office has instituted a fellowship program which is administered by the American Historical Association in cooperation with the Economic History Association, the Society for the History of Technology, and the History of Science Society. Fellowships may be for pre-doctoral or post-doctoral work and are broadly defined to encourage the development of expertise in a variety of areas.

ARC ____
MSFC ____
LeRC ____
KSC ____
LaRC ____
JSC ____
JPL ____
HQ X
GSFC ____
SSC ____

NUMBER OF PARTICIPANTS: 1/year

COST (FY 1987): $25,000

FUNDING ORGANIZATION: Headquarters

* * *

PROGRAM: Centers for the Commercial Development of Space

LEVEL: Graduate, Post-Graduate, Faculty

DESCRIPTION:

The purpose of these Centers is to stimulate high-technology research which will take advantage of the characteristics of space and will eventually lead to development of new commercial products. NASA funding for Centers, selected through competitive announcements, ranges from $750,000 to $1,000,000 annually for a period not to exceed 5 years. There are now 16 centers.

ARC ____
MSFC ____
LeRC ____
KSC ____
LaRC ____
JSC ____
JPL ____
HQ X
GSFC ____
SSC ____

FUNDING ORGANIZATION: Headquarters Office of Commercial Programs

PROGRAM: College Lectures on Aeronautics and Space Science (CLASS)

LEVEL: Undergraduate, Graduate

DESCRIPTION:

This program disseminates scientific and technical information on NASA research and development to university students in science, engineering, and education. The information is delivered by a group of discipline specialists who lecture on college campuses around the country. The programs foster improved NASA/university relations and stimulate interest in faculty and student research programs and aerospace career opportunities.

ARC ______
MSFC ______
LeRC ______
KSC ______
LaRC ______
JSC ______
JPL ______
HQ X
GSFC ______
SSC ______

COST (FY 1987): Part of Aerospace Education Services Program (See Elementary and Secondary)

FUNDING ORGANIZATION: Headquarters Educational Affairs Division

* * *

PROGRAM: Fund for Independent Research; Fund for Innovative Research

LEVEL: Graduate, Post-Graduate Faculty

DESCRIPTION:

The objective of the Fund for Independent Research (OAST) and the Fund for Innovative Research (OSSA) is to support novel, long-term, high-risk research not in the mainstream of NASA's research program. In FY 1987, NASA's Office of Aeronautics and Space Technology reserved $2.5 million for the funding of this independent research within the universities. The Office of Space Science and Applications obligated the same amount. The grants are usually in the $50,000 range.

ARC ______
MSFC ______
LeRC ______
KSC ______
LaRC ______
JSC ______
JPL ______
HQ X
GSFC ______
SSC ______

COST (FY 1987): $5,000,000

FUNDING ORGANIZATION: Headquarters Office of Aeronautics and Space Technology and Headquarters Office of Space Science and Applications

PROGRAM: Hypersonic Training Grants

LEVEL: Graduate, Post-Graduate, Faculty

DESCRIPTION:

With research focused on the National Aero-Space Plane program, NASA established a university hypersonic training and research program. The objective of the program is to encourage universities to reestablish a program in hypersonics and to encourage graduate students to pursue hypersonic studies.

ARC ______
MSFC ______
LeRC ______
KSC ______
LaRC ______
JSC ______
JPL ______
HQ __X__
GSFC ______
SSC ______

NUMBER OF PARTICIPANTS: 3 universities

COST (FY 1987): $600,000

FUNDING ORGANIZATION: Headquarters Office of Aeronautics and Space Technology

* * *

PROGRAM: In-Space Technology Experiments Outreach Program

LEVEL: Undergraduate, Graduate, Post-Graduate, Faculty

DESCRIPTION:

The objective of this program is to provide funding to define and develop in-space R&T experiments for the Space Shuttle, Space Station, and ELV's. Technology themes include space structures, fluid management, space environmental effects, automation and robotics, energy systems and thermal management, information systems and in-space operations.

ARC ______
MSFC ______
LeRC ______
KSC ______
LaRC ______
JSC ______
JPL ______
HQ __X__
GSFC ______
SSC ______

NUMBER OF PARTICIPANTS: 11

COST (FY 1987): $1,700,000

FUNDING ORGANIZATION: Headquarters Office of Aeronautics and Space Technology

PROGRAM: Space Applications Program

LEVEL: University

DESCRIPTION:

The objectives of the Space Applications Program are to provide, through university grants, for the development and use of a core U.S. national university capability to: (1) conduct multiyear, discipline-oriented basic and applied research in space applications; (2) establish and maintain multidisciplinary remote sensing centers to develop, test, and evaluate experimental remote sensing techniques; and (3) use remote sensing techniques in furthering the understanding of Earth sciences. This program has been the major impetus for the development of a geographically distributed network of universities for research and development of techniques designed to use remote sensing data in the study of global Earth science processes and Earth resources management.

ARC		LeRC		LaRC		JPL		GSFC	
MSFC		KSC		JSC		HQ	X	SSC	

COST (FY 1987): $2.5 million

FUNDING ORGANIZATION: Headquarters Office of Space Science and Applications

* * *

PROGRAM: Engineering Student Groups

LEVEL: Undergraduate

DESCRIPTION:

Students from professional organizations in local university scientific/engineering programs visit NASA centers. This program's intent is to expose these young people to the job opportunities and engineering/scientific programs at NASA installations

ARC	X	LeRC	X	LaRC	X	JPL	X	GSFC	X
MSFC	X	KSC	X	JSC	X	HQ	X	SSC	X

PROGRAM: Memoranda of Understanding (MOU) Between NASA Centers and Universities

LEVEL: University

DESCRIPTION:

MOU's are legal documents which commit a NASA center to some cooperative program with a participating university.

ARC	X	LeRC	X	LaRC	X	JPL	X	GSFC	X
MSFC	X	KSC	X	JSC	X	HQ	X	SSC	X

* * *

PROGRAM: Publications

LEVEL: University

DESCRIPTION:

Technical and special publications and reports, as well as brochures, pamphlets, fact sheets, and lithographs are printed by Headquarters and the Centers and distributed nationally.

ARC	X	LeRC	X	LaRC	X	JPL	X	GSFC	X
MSFC	X	KSC	X	JSC	X	HQ	X	SSC	X

* * *

PROGRAM: Clinical and Research Aspects of Aerospace Medicine (Residents)

LEVEL: Aerospace Medicine Residents

DESCRIPTION:

Similar to the above, this program is for medical residents and is a 1-year rotation through the KSC or JSC Biomedical Office. It includes participation in Medical Operations activities (Occupational Medicine, Aviation Medicine, Launch and Landing Medical Support, Environmental Sciences) and ongoing research activities (Aerospace Medicine, Maintenance of Fitness, Protective Equipment). A similar rotation is offered to physiology Ph.D. candidates at KSC.

ARC		LeRC		LaRC		JPL		GSFC	
MSFC		KSC	X	JSC	X	HQ		SSC	

PROGRAM: College Work Study Program

LEVEL: Undergraduate

DESCRIPTION:

This program provides part-time and vocational training opportunities for college students who are in financial need and require assistance to pursue a course of study in college. Eligible students are recommended by schools with which NASA has work study agreements. The Department of Labor provides grants to these participating schools to pay up to 70 percent of the student's salary and NASA provides grants to the schools for the remaining money.

ARC X
MSFC ______
LeRC ______
KSC X
LaRC ______
JSC X
JPL ______
HQ ______
GSFC ______
SSC ______

NUMBER OF PARTICIPANTS: 22

* * *

PROGRAM: Graduate Program in Aeronautics

LEVEL: University

DESCRIPTION:

Research grants are awarded to approximately 100 U.S. citizen graduate students at 50 universities. The student participants conduct research in the Centers' laboratories under the mentorship of NASA scientists and engineers. Grants are awarded for proposals which meet specific research needs in aeronautical disciplines. The long-term outcome of the program is a cadre of research-trained graduate engineers who will continue the leadership role of the United States in aeronautics.

ARC X
MSFC X
LeRC X
KSC ______
LaRC X
JSC ______
JPL ______
HQ X
GSFC ______
SSC ______

NUMBER OF PARTICIPANTS: 100

COST (FY 1987): $2.5 million

FUNDING ORGANIZATION: Headquarters Office of Aeronautics and Space Technology

PROGRAM: Graduate Student Researchers Program

LEVEL: Graduate

DESCRIPTION:

This program is designed to significantly increase the number of highly trained scientists and engineers in aeronautics, space science, and space technology to meet the continuing needs of the national aerospace effort. Opportunities are provided for graduate students to conduct their thesis research on a NASA-related topic at a Center or their home institutions. Selections are made on the basis of proposals submitted by the students. Selected students receive a stipend for 3 years.

ARC X
LeRC X
LaRC X
JPL X
GSFC X
MSFC X
KSC ____
JSC X
HQ X
SSC X

NUMBER OF PARTICIPANTS: 297

COST (FY 1987): $4.7 million

FUNDING ORGANIZATION: Headquarters Educational Affairs Division

* * *

PROGRAM: Intergovernmental Personnel Act Program (IPA)

LEVEL: University Faculty

DESCRIPTION:

Under the Intergovernmental Personnel Act (IPA) of 1970, employees may be assigned between Federal agencies and states, local governments, Indian tribal governments, institutions of higher education, and other eligible organizations for periods up to 2 years, to work on solving issues/problems involving the Federal government and other entities. Gaining and sharing experience in another administrative environment creates increased understanding and cooperation.

ARC X
LeRC X
LaRC X
JPL ____
GSFC X
MSFC X
KSC X
JSC X
HQ X
SSC X

NUMBER OF PARTICIPANTS: 21

COST (FY 1987): $566,000

FUNDING ORGANIZATION: NASA-wide

PROGRAM: Joint University Institutes

LEVEL: University Undergraduates, Graduate Students, Faculty

DESCRIPTION:

A joint university institute is established at each of NASA's research centers. The objectives of the institutes are to promote an active NASA/university interchange in the mainstream cooperative, innovative research areas and to prepare qualified students for careers in research, development, design, and teaching. The education and research opportunities offered in the program combine the academic resources of the university and the professional research staff and facilities of the research centers. These opportunities enable students to involve themselves in research projects that excite their interest and permit them to associate with university faculty and scientists and engineers from the research centers. A core of funding is provided for the joint institutes and specific tasks are funded at the institutes as part of the basic research grant program.

The three institutes are:

Ames and Stanford University Joint Institute for Aeronautics and Acoustics

Langley and George Washington University - Joint Institute for Advancement of Flight Sciences

Lewis and University of Akron, Case Western Reserve University, Cleveland State University, and University of Toledo - Joint Institute for Aerospace Propulsion and Power

ARC X
MSFC ___
LeRC X
KSC ___
LaRC X
JSC ___
JPL ___
HQ X
GSFC ___
SSC ___

COST (FY 1987): $567,000 plus individual research grants

FUNDING ORGANIZATION: Headquarters Office of Aeronautics and Space Technology

* * *

PROGRAM: Loan of Material or Equipment to Universities

LEVEL: Universities

DESCRIPTION:

NASA centers may lend technical and scientific equipment to universities working on NASA grants, contracts, and cooperative agreements.

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL X
HQ ___
GSFC X
SSC X

PROGRAM: NASA/ASEE Summer Faculty Fellowship Program

LEVEL: University Faculty

DESCRIPTION:

University faculty members are appointed as fellows and spend 10 weeks in cooperative research and study at NASA centers. Ninety percent of the time is devoted to a research problem and the remaining time to a study program. The study program consists of lectures and seminars on topics of general interest or of direct relevance to the fellow's research project. The program is designed to offer selected faculty members an opportunity to enhance their career development in engineering and science and is conducted in cooperation with the American Society for Engineering Education (ASEE).

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL X
HQ ____
GSFC X
SSC X

NUMBER OF PARTICIPANTS: 200

COST (FY 1987): $2.5 million

FUNDING ORGANIZATION: Headquarters Educational Affairs Division

PROGRAM: NASA/University Advanced Design Program

LEVEL: Undergraduate, Graduate

DESCRIPTION:

The objectives of the program are to strengthen the engineering design curriculum within universities, heighten university enthusiasm for design, foster NASA/university ties, encourage graduate studies in design, and produce innovative designs. The program is managed by the Universities Space Research Association for NASA. There are 32 universities in the program (26 space and 6 aeronautics). A teaching assistant works at a NASA research center during the summer preparing for the university professor to teach a class during the academic year in advanced design. Universities and Centers work together during the academic year to produce an advanced mission design as a class project. Centers provide support in the form of data, lecturers, and guidance. During the month of June, a conference is held where selected students present their designs to each other and to NASA managers. This program affords the academic community a unique opportunity to contribute innovative and creative concepts for future aeronautics and space systems as well as to expand the Nation's talent base in design technology.

ARC __X__
MSFC __X__
LeRC __X__
KSC __X__
LaRC __X__
JSC __X__
JPL __X__
HQ _____
GSFC __X__
SSC _____

COST (FY 1987): $1.4 million

FUNDING ORGANIZATION: Headquarters Program Offices (primarily Headquarters Office of Aeronautics and Space Technology) and Headquarters Educational Affairs Division

PROGRAM: OAST Centers of Excellence

LEVEL: Graduate, Post-Graduate, Faculty

DESCRIPTION:

The program provides funding for basic research tasks to ensure a critical mass of research in selected fields of interest to NASA and to foster interdisciplinary work in these fields. The university-based centers are expected to develop a unique expertise in new or emerging fields vital to the Nation's space program. Current programs exist in materials, robotics, and computer science. Centers are located at the University of Illinois, Massachusetts Institute of Technology, Virginia Polytechnic Institute, Stanford, and Rensselaer Polytechnic Institute.

ARC	X	LeRC	X	LaRC	X	JPL		GSFC	
MSFC		KSC		JSC		HQ	X	SSC	

COST (FY 1987): $2,000,000

FUNDING ORGANIZATION: Headquarters Office of Aeronautics and Space Technology

PROGRAM: OAST Research Institutes

LEVEL: University Undergraduate, Graduate Students and Faculty

DESCRIPTION:

NASA's three existing Research Institutes are cooperative agreements between NASA scientists, engineers and university faculty. The institutes are intended to strengthen specific capabilities (e.g., computational analysis and computer applications in science and engineering) utilizing unique NASA facilities. The research is carried out by visiting university scientists, postdoctoral students, and graduate students during appointments ranging from 2 months to 2 years.

The three Institutes are:

Langley - Institute for Computer Applications in Science and Engineering - ICASE

Ames - Research Institute for Advanced Computer Science - RIACS

Lewis - Institute for Computational Mechanics in Propulsion - ICOMP

ARC __X__
MSFC _____
LeRC __X__
KSC _____
LaRC __X__
JSC _____
JPL _____
HQ __X__
GSFC _____
SSC _____

NUMBER OF PARTICIPANTS: 100

COST (FY 1987): $2.25 million

FUNDING ORGANIZATION: Headquarters Office of Aeronautics and Space Technology

PROGRAM: Resident Research Associateship Program

LEVEL: Post-Doctoral Program

DESCRIPTION:

This program provides post-doctoral scientists and engineers of unusual promise the opportunity to conduct research and to contribute to the research effort of a NASA laboratory. Applicants are responsible for the selection of a research project that interests them and is related to one of the agency's areas of interest. Applications are received and evaluated by the National Research Council. Associates conduct research in collaboration with a NASA research advisor for a 2-year period and receive a monthly stipend. Foreign nationals are eligible for this program.

ARC	X	LeRC	X	LaRC	X	JPL	X	GSFC	X
MSFC	X	KSC		JSC	X	HQ	X	SSC	X

NUMBER OF PARTICIPANTS: 235

COST (FY 1987): $12,000,000

FUNDING ORGANIZATION: Headquarters Program Offices and Centers

* * *

PROGRAM: Use of Laboratory Facilities

LEVEL: Universities

DESCRIPTION:

NASA centers have many unique research laboratory facilities. Laboratory facilities are made available to members of the academic community where such use benefits the Center and the requesting institution. The requesting institution may be asked to defray any expenses incurred in the use of the facility.

ARC	X	LeRC	X	LaRC	X	JPL	X	GSFC	X
MSFC	X	KSC	X	JSC	X	HQ		SSC	X

PROGRAM: Associated Western Universities

LEVEL: Undergraduate, Graduate, Post-Graduate, Faculty

DESCRIPTION:

The Jet Propulsion Laboratory is a cooperating laboratory with the Associated Western Universities, Inc. This agency, funded by the Department of Energy, supports undergraduates and graduate students, post-doctoral and faculty research in energy-related topics at cooperating Government labs. Participants work directly with Jet Propulsion Laboratory personnel engaged in energy programs.

ARC		LeRC		LaRC		JPL	X	GSFC	
MSFC		KSC		JSC		HQ		SSC	

NUMBER OF PARTICIPANTS: 3

FUNDING ORGANIZATION: Department of Energy

* * *

PROGRAM: Caltech Summer Undergraduate Research Fellowships (SURF)

LEVEL: Undergraduates

DESCRIPTION:

This is a summer program for undergraduates. Participants are given a listing of research opportunities; proposals for summer research are prepared; winning proposers perform research at the Jet Propulsion Laboratory and are responsible for both a written and an oral report describing their research.

ARC		LeRC		LaRC		JPL	X	GSFC	
MSFC		KSC		JSC		HQ		SSC	

NUMBER OF PARTICIPANTS: 36

PROGRAM: Case-NASA Cooperative Aerospace R&D Internship/Fellowship Program

LEVEL: Secondary, Undergraduate, Secondary Teachers, University Faculty

DESCRIPTION:

This program provides 12-week summer internships to graduate and undergraduate students of science and engineering. At the Center, participants support research areas related to their majors. Provision is made for limited numbers of college-bound high school graduates, high school teachers, and college faculty.

ARC ____
MSFC ____
LeRC X
KSC ____
LaRC ____
JSC ____
JPL ____
HQ ____
GSFC ____
SSC ____

NUMBER OF PARTICIPANTS: 175

COST (FY 1987): $820,000

FUNDING ORGANIZATION: Lewis Research Center

* * *

PROGRAM: Clinical and Research Aspects of Aerospace Medicine (Medical Students)

LEVEL: Aerospace Medicine Students

DESCRIPTION:

This program is offered by Wright State University to third-year aerospace medicine students.

It provides an assignment in the KSC Biomedical Office and includes participation in Medical Operations activities (Occupational Medicine, Aviation Medicine, Launch and Landing Medical Support, Environmental Sciences) and ongoing research activities (Aerospace Medicine, Maintenance of Fitness, Protective Equipment). Teaching methods include seminars, demonstrations, laboratory participation and preceptorships. Student evaluation is based on faculty observation.

ARC ____
MSFC ____
LeRC ____
KSC X
LaRC ____
JSC ____
JPL ____
HQ ____
GSFC ____
SSC ____

PROGRAM: GSFC Film Distribution

LEVEL: University

DESCRIPTION:

The film distribution program from the Goddard Space Flight Center services 12 states on the east coast. Films are color 16mm. The majority of the films are loaned to educational facilities, and also are loaned at no cost to civic, professional, youth groups, and private industry.

ARC ____
MSFC ____
LeRC ____
KSC ____
LaRC ____
JSC ____
JPL ____
HQ ____
GSFC X
SSC ____

COST (FY 1987): $34,125

* * *

PROGRAM: Langley Aerospace Research Summer Scholars (LARSS)

LEVEL: University - Undergraduate, Graduate Students

DESCRIPTION:

The LARSS program was established in 1986 for the benefit of undergraduate seniors as well as first-year graduate students who are pursuing careers in aerospace disciplines. The 8-week summer program is intended to motivate high-caliber engineering and science students to pursue and earn graduate degrees and to enhance their interest in aerospace research by giving them an opportunity to conduct research–in a Federal laboratory.

ARC ____
MSFC ____
LeRC ____
KSC ____
LaRC X
JSC ____
JPL ____
HQ ____
GSFC ____
SSC ____

NUMBER OF PARTICIPANTS: 65

COST (FY 1987): $201,000

FUNDING ORGANIZATION: Langley Research Center

PROGRAM: NASA/Virginia Polytechnic Institution (VPI) and State University Composites

LEVEL: University Faculty, Undergraduate and Graduate Students

DESCRIPTION:

This program is a joint effort in composite materials research and education between the VPI&SU and NASA Langley. The purpose of the program is to prepare qualified students for careers in research and teaching in the field of composite materials. The academic and research resources of VPI&SU are combined with the research and applications resources of Langley to provide the student with an educational program which encompasses both academic and practical training.

ARC ______
MSFC ______
LeRC ______
KSC ______
LaRC X
JSC ______
JPL ______
HQ ______
GSFC ______
SSC ______

NUMBER OF PARTICIPANTS: 15

COST (FY 1987): $320,000

FUNDING ORGANIZATION: Langley Research Center

* * *

PROGRAM: Planetary Geology Undergraduate Researcher Program (PGURP)

LEVEL: Undergraduate

DESCRIPTION:

Students are placed at various institutions to perform research tasks.

ARC ______
MSFC ______
LeRC ______
KSC ______
LaRC ______
JSC ______
JPL X
HQ ______
GSFC ______
SSC ______

NUMBER OF PARTICIPANTS: 10

PROGRAM: Research Affiliates

LEVEL: University Faculty

DESCRIPTION:

Research Affiliates appointments recognize the working relationship between researchers in the academic community and their scientific or engineering counterparts at the Jet Propulsion Laboratory. Interaction with the academic community is fostered, but without fee, salary, stipend or grants for the academic researcher.

ARC ______
MSFC ______
LeRC ______
KSC ______
LaRC ______
JSC ______
JPL __X__
HQ ______
GSFC ______
SSC ______

NUMBER OF PARTICIPANTS: 3

* * *

PROGRAM: San Jose State University/NASA
Ames Research and Development Program

LEVEL: Undergraduate, Graduate, Post-Graduate, Secondary and University Faculty

DESCRIPTION:

The objectives of the program are to allow students and faculty members of universities and colleges throughout the United States the opportunity to participate in research and development activities at NASA-Ames. Ames has an agreement with the San Jose State University Foundation whereby the Foundation will administer the program for Ames. Participants work part-time during the school year and full-time during vacation periods.

ARC __X__
MSFC ______
LeRC ______
KSC ______
LaRC ______
JSC ______
JPL ______
HQ ______
GSFC ______
SSC ______

NUMBER OF PARTICIPANTS: 130

COST (FY 1987): $400,000

FUNDING ORGANIZATION: Ames Research Center

PROGRAM: Skilled Trades Experience Program

LEVEL: University - Undergraduate

DESCRIPTION:

This program is designed for crafts people in selected trades. Participants must be enrolled in an accredited institution or have an approved course plan. In addition, participants must commit to a 6,240 hour on-the-job training program.

ARC ______
MSFC ______
LeRC ______
KSC ______
LaRC ______
JSC ______
JPL __X__
HQ ______
GSFC ______
SSC ______

NUMBER OF PARTICIPANTS: 14

FUNDING ORGANIZATION: Jet Propulsion Laboratory

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Asian		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
1		7			1				1	4	

PROGRAM: Space Life Sciences Training Program

LEVEL: Undergraduate

DESCRIPTION:

An intensive 6-week training program is conducted at Kennedy Space Center for college students interested in becoming space life scientists. Students participate in the conceptualization, preparation, pre- and post-flight testing, data analysis, and report preparation phases of space flight experiments and NASA life sciences research. Five semester hours of tuition-free credit is offered each student through Florida A&M University; the educational experiences are designed and carried out largely by Bionetics Corporation.

ARC ______
MSFC ______
LeRC ______
KSC __X__
LaRC ______
JSC ______
JPL ______
HQ ______
GSFC ______
SSC ______

NUMBER OF PARTICIPANTS: 36

COST (FY 1987): $667,000

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
3	1	2	1				5			10	14

PROGRAM: St. Andrews College Program for the Handicapped

LEVEL: Undergraduate

DESCRIPTION:

This program provides 3 weeks of intensive indoctrination to KSC programs for handicapped college students.

ARC ______	LeRC ______	LaRC ______	JPL ______	GSFC ______
MSFC ______	KSC X	JSC ______	HQ ______	SSC ______

NUMBER OF PARTICIPANTS: 17

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
4	1									6	6

* * *

PROGRAM: Work Engagement for Scientific Technicians

LEVEL: Undergraduate

DESCRIPTION:

This program is a 1-year internship for community college students seeking their first 2- to 4-year degree in scientific or technical areas. The interns receive laboratory or field experience 20 hours a week during the school year, and 40 hours during the summer. Ninety percent of the graduates transfer to 4-year universities.

ARC X	LeRC ______	LaRC ______	JPL ______	GSFC ______
MSFC ______	KSC ______	JSC ______	HQ ______	SSC ______

NUMBER OF PARTICIPANTS: 17

COST (FY 1987): $486,000

FUNDING ORGANIZATION: Ames Research Center

Minority Outreach Programs

Minority Outreach Programs - Executive Summary

The 30 Minority Outreach Programs described in this section are designed to augment the Nation's engineering and science workforce by helping to eliminate the underrepresentation of minorities, women, and handicapped in these professions. Since the mathematics and science education pipeline is continuous from elementary through graduate school levels, these programs seek to engage and retain larger numbers of students from underrepresented groups in activities at each level. Most of the programs described in this section (20) are designed for the secondary and undergraduate student populations. Most skill-based outreach programs serve thirty or fewer participants, while single exposure "career interest" programs may reach a thousand or more. Thirteen programs are run in cooperation with other organizations such as Howard University, the University of New Mexico, and the Black College Satellite Telecommunications Network.

Outreach programs for students at the elementary and secondary levels offer a wide range of exposures to aerospace careers, from single lectures, to a series of site visits, to laboratory courses which allow "hands-on" participation in scientific experiments. Programs such as NURTURE and SHARP aim to increase participants' math/science interest and skills; improve performance on standarized tests; offer opportunities to serve as apprentices to NASA engineers and scientists; and promote growth in personal and study skills areas likely to affect academic performance.

Another group of outreach programs prepares elementary and secondary school teachers and administrators to motivate youth from underrepresented groups to pursue engineering/science careers. Through exposure to workshops, lectures, and field trips, participants learn to develop instructional materials and plans for their utilization; improve instruction in scientific content areas; and provide peer in-service training to nonparticipating colleagues at their home schools. An example of such a program is the Workshop for Teachers from American Indian Schools, conducted by the American Indian Science and Engineering Society.

At the undergraduate level, outreach programs focus on those students who have decided to pursue engineering or science degrees. Programs such as the Summer Institute in Computer Applications and the Xavier University Engineering Bridge Program are designed to orient students to the rigors of scientific study at the collegiate level; improve performance in technical subjects; develop interest in and provide preparation for graduate study; provide opportunities for supervised research at NASA centers and with NASA Principal Investigators on the college campus; develop leadership skills; and provide financial support to sustain students during their involvement in program activities.

Graduate outreach programs, like the Graduate Student Researchers Program, Underrepresented Minority Focus, provide mentors and offer opportunities for supervised research experiences at NASA centers and with NASA Principal Investigators.

Outreach programs also include satellite programs for parents with children interested in math and science, like the University of the District of Columbia Saturday Academy, and programs to enhance the computer skills of Historically Black College Faculty.

Further information about the programs described in this section can be obtained from the Headquarters Office of Equal Opportunity Programs and the Center Equal Opportunity Officers listed below.

NASA Headquarters Office of Equal Opportunity Progams Code U Washington, DC 20546	Mr. Lewin S. Warren (202) 453-2163
Ames Research Center Mail Stop 241-7 Moffett Field, CA 94035	Ms. Gloria G. Hall (415) 694-5626
Goddard Space Flight Center Code 120 Greenbelt, MD 20771	Mr. Dillard Menchen (301) 286-7348
Jet Propulsion Laboratory Mail Stop 114-121 4800 Oak Grove Drive Pasadena, CA 91109	Mr. Jesse R. Rubalcaba (818) 354-6400
Johnson Space Center Code AJ Houston , TX 77058	Mr. Joseph D. Atkinson, JR. (713) 483-4831
Kennedy Space Center Code EO KSC, FL 32899	Mr. Johnny A. Diggs, Jr. (305) 867-2307
Langley Research Center Mail Stop 178 Hampton, VA 23665	Mr. Burnett W. Peters, Jr. (804) 865-3487
Lewis Research Center Mail Stop 500-311 21000 Brookpark Rd. Cleveland, OH 44135	Mr. Robert F. Lawrence (216) 433-2323
Marshall Space Flight Center Code CE01 MSFC, AL 28512	Mr. James C. Rice, Jr. (205) 544-4927
Stennis Space Center Bldg. 2425 SSC, MS 39529	Ms. Ann Westendorf (601) 688-1585

MINORITY OUTREACH PROGRAMS - OVERVIEW

Activity	Participants	Organization	Level	Cost FY 87	Funding Org.	Notes
El Ingeniero	18	HQ	second.	$52,272	OEOP	Hispanic: 8 M/10 F
Graduate Researcher Development Program	15	HQ	undergrad	$95,965	OEOP	Underrep. Minor. Black: 5 M/4 F Hispanic: 3 M/1 F P. Islander: 2 M/0 F
Parent Education Teleworkshops	N/A	HQ	general public	$24,960	OEOP	Black College Satellite Telecommunication Network
Promotion and Awareness of Careers in Engineering (PACE)	N/A	HQ	second. undergrad	$30,000	OEOP	Use Mexican American Engineering Society student chapters
Recruitment & Retention for Excellence in Engineering	20	HQ	undergrad	$51,645	OEOP	Hispanic: 17 M/0 F Native Amer.: 0 M/3 F Run by University of New Mexico
Stevens Middle School Math and Science Program	91	HQ	second.	$30,343	OEOP	Black: 34 M/51 F Hispanic: 5 M/0 F Non-Minor.: 0 M/1 F In cooperation with Stevens Institute of Technology
University of DC Saturday Academy	275	HQ	elem/sec teachers & students	$112,000	OEOP	Black: 112 M/123 F Hispanic: 7 M/13 F P. Islander: 3 M/7 F Non-Minor.: 3 M/7 F

MINORITY OUTREACH PROGRAMS - OVERVIEW (cont.)

Activity	Participants	Organization	Level	Cost FY 87	Funding Org.	Notes
Urban Community Enrichment Program	N/A	HQ	elem/sec teachers	$70,000	EAD	
Workshop for Teachers from American Indian Schools	20	HQ	elem/sec teachers	$30,000	OEOP	Native Amer.: 0 M/8 F Non-Minor.: 6 M/6 F Conducted by American Indian Science and Engineering Society
Xavier University Engineering Bridge Program	46	HQ	undergrad	$34,970	OEOP	Black: 20 M/26 F In cooperation with Xavier University
Graduate Degree for Minorities in Engineering (GEM)	N/A	ARC LeRC	grad	N/A	N/A	In cooperation with National Consortium for Graduate Degrees for Minorities in Engineering, Inc.
Graduate Student Researchers Program (Underrepresented Minority Focus)	57	all centers and HQ	graduate	$1,026,000	OEOP	Underrep. Minor. Black: 21 M/5 F Hispanic: 21 M/4 F Native Amer.: 1 M/3 F P. Islander: 1 M/1 F
Historically Black Colleges and Universities	205	all centers and HQ	undergrad grad	$6,934,167	OEOP	

MINORITY OUTREACH PROGRAMS - OVERVIEW (cont.)

Activity	Participants	Organization	Level	Cost FY 87	Funding Org.	Notes
Summer High School Apprenticeship Research Program (SHARP)	145	ARC MSFC LeRC KSC LaRC GSFC HQ	second.	$225,000	EAD	Black: 68 Hispanic: 9 P. Islander: 25 Non-Minor.: 43
Summer Institute for Computer Simulation Network	16	LaRC GSFC HQ	undergrad grad faculty	$121,200	OEOP	Black: 10 M/3 F Hispanic: 1 M/0 F Native Amer.: 2 M/0 F
Aerospace Fellows	2	MSFC	undergrad	$20,000	OEOP & MSFC	Black: 2 F
Brevard County Job Corps	350	KSC	second.	N/A	N/A	
Engineering Concepts Institute	23	KSC	undergrad	$35,011	OEOP & KSC	Black: 20 M/3 F In cooperation with Florida A&M
Engineering Enrichment Program	10	GSFC	second. undergrad	$70,000	GSFC	In cooperation with Morgan State University
External Experience for Students in the NIH-Sponsored Minority Access to Research Careers (MARC) Program	N/A	KSC	undergrad	N/A	N/A	

MINORITY OUTREACH PROGRAMS - OVERVIEW (cont.)

Activity	Participants	Organization	Level	Cost FY 87	Funding Org.	Notes
Head Start Educators Programs	N/A	KSC	pre-primary teachers	N/A	N/A	
Lincoln University Aerospace Engineering Recruitment (LASER)	10	GSFC	second. undergrad	$60,000	OEOP & GSFC	Black: 5 M/5 F
Mathematics and Engineering Science Achievement (MESA)	85	KSC	second.	N/A	N/A	Black: 6 M/7 F Hispanic: 30 M/34 F Native Amer.: 3 M/5 F
Minority Engineering Student Orientation Day	120	JPL	undergrad	$3,500	JPL	Black: 15 M/5 F Hispanic: 55 M/29 F Native Amer.: 5 M/3 F P. Islander: 5 M/3 F
NASA's Unique Resident Tutoring for Up-and-Coming Replacement Engineering (NURTURE)	20	KSC	second.	N/A	N/A	
Public Service Intern Program	8	GSFC	grad	$30,000	GSFC	In cooperation with Howard University
Summer Graduate Intern program	7	GSFC	grad	$56,000	OEOP & GSFC	Black: 3 M/2 F Hispanic: 1 M/0 F Non-Minor.: 0 M/1 F In cooperation with Morgan State University

MINORITY OUTREACH PROGRAMS - OVERVIEW (cont.)

Activity	Participants	Organization	Level	Cost FY 87	Funding Org.	Notes
Summer Institute in Computer Applications	15	GSFC	undergrad	$55,885	OEOP, GSFC	Black: 6 M/4 F Hispanic: 2 M/3 F Run by Bowie State College
Summer Minority High School Program	13	JPL	second. undergrad	N/A	JPL	Black: 2 M/2 F Hispanic: 7 M/2 F
Upward Bound Program	10	JPL	second.	N/A	N/A	Hispanic: 6 M/4 F

Number of Programs 30	Participants 1,581	HQ only 10 Multi-center 5 Single-center 15	Second 7 Undergrad 8 Grad 4 Mix 11	Cost $9.17 Million

PROGRAM: El Ingeniero

LEVEL: Secondary

DESCRIPTION:

El Ingeniero is a summer, 6-week, intensive academic enhancement and intervention program for 7th and 8th graders designed to ensure the better-than-average completion of math and science curriculum and the eventual pursuit of science and engineering careers.

The objectives of this program are to increase students' understanding of their values, attitudes, interests and abilities and to reinforce their self-confidence, self-esteem and positive work-related attitudes. The program also attempts to: (a) increase students' knowledge of the engineering profession and the requirements for entering the field; (b) to increase students' math/science interest and skills; (c) to continue nurturing the interest of program alumni in engineering and science careers during their high school years; (d) to establish and maintain alumni support groups; and (e) to promote math/science achievement during the high school years.

ARC		LeRC		LaRC		JPL		GSFC	
MSFC		KSC		JSC		HQ	X	SSC	

NUMBER OF PARTICIPANTS: 18

COST (FY 1987): $52,272

FUNDING ORGANIZATION: Office of Equal Opportunity Programs

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
		8	10								

PROGRAM: Graduate Researcher Development Program

LEVEL: Undergraduate

DESCRIPTION:

Under the direction of the Massachusetts Pre-Engineering Program, this program is conducted in the Boston-area for underrepresented minority undergraduates. The program's objectives are (a) to increase the number of minority students enrolling in graduate technical majors; (b) to develop participants' interest in research careers; (c) to help students get admitted to college engineering majors; (d) to improve students' personal and leadership skills; and (e) to develop technical career and graduate education materials.

Mentors are provided for participants' research projects. Summer seminars in advanced technical areas are provided, in addition to academic advising and counseling.

ARC ____
MSFC ____
LeRC ____
KSC ____
LaRC ____
JSC ____
JPL ____
HQ __X__
GSFC ____
SSC ____

NUMBER OF PARTICIPANTS: 15

COST (FY 1987): $95,965

FUNDING ORGANIZATION: Office of Equal Opportunity Programs

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
5	4	3	1			2	0				

PROGRAM: Parent Education Teleworkshops

LEVEL: General Public

DESCRIPTION:

This program conducts a series of televised educational workshops that assist parents to help improve the education of their children--particularly in science and math. It also attempts to increase viewers' knowledge of technical careers and to establish a connection between education and future career options. These workshops are presented over the Black College Satellite Telecommunication Network. Pre-telecast activities include a get-acquainted session; a workshop preview; and actual hands-on educational experiences (e.g., test-taking skills, family math).

ARC		LeRC		LaRC		JPL		GSFC	
MSFC		KSC		JSC		HQ	X	SSC	

COST (FY 1987): $24,960

FUNDING ORGANIZATION: Office of Equal Opportunity Programs

* * *

PROGRAM: Promotion and Awareness of Careers in Engineering (PACE)

LEVEL: Secondary, Undergraduate

DESCRIPTION:

The purpose of this program is to increase the number of minority youths preparing for engineering and technical careers. Using the Mexican American Engineering Society (MAES) Chapters on six university sites, student members work directly with minority youths in nearby high schools and junior high schools to provide career exposure and increase students' interest in studying math and science, and to assist them in applying to and being admitted to engineering schools. MAES also helps student members improve their college GPAs and retention, and identifies and disseminates graduate school information to interested students.

ARC		LeRC		LaRC		JPL		GSFC	
MSFC		KSC		JSC		HQ	X	SSC	

COST (FY 1987): $30,000

FUNDING ORGANIZATION: Office of Equal Opportunity Programs

PROGRAM: Recruitment & Retention for Exellence in Engineering

LEVEL: Undergraduate

DESCRIPTION:

The purpose of this Program, run by the University of New Mexico, is to increase the number of high achieving minority group engineering students from remote areas of New Mexico who are available to participate in NASA's Co-op Program. Selected students are given tutoring, mandatory study sessions, study and learning skills workshops, and scholarship support. In order to remain in the Program beyond the freshman level, students must attain at least a 3.0 grade point average. Those who succeed are provided continuing support which includes peer tutoring, co-op work experience, monthly graduate school/employment seminars, and continued scholarship support.

ARC _____ LeRC _____ LaRC _____ JPL _____ GSFC _____
MSFC _____ KSC _____ JSC _____ HQ X SSC _____

NUMBER OF PARTICIPANTS: 20

COST (FY 1987): $51,645

FUNDING ORGANIZATION: Office of Equal Opportunity Programs

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
		17	0	0	3						

PROGRAM: Stevens Middle School Math & Science Program

LEVEL: Secondary

DESCRIPTION:

This program, run in cooperation with the Stevens Institute of Technology, attempts: (a) to improve students' in-class and standardized test performance; (b) to encourage students to take college-track math and science courses when they enter high school; (c) to develop students' critical thinking and problem-solving capabilities through "hands-on" science activities; and (d) to improve students' attitudes toward science and math. The students participate in math and science enrichment classes. They are divided into two heterogeneous ability groups--one consisting of seventh graders, another of eighth graders.

In this Program, the Institute trains teachers first, then holds "hands-on" math/science activities twice weekly in the middle school classrooms as a supplement to the daily instructions. Additionally, interactive sessions in the Institute's science and engineering labs allow students to participate in demonstrations of technical phenomena designed to stimulate their scientific interest.

ARC ____

MSFC ____

LeRC ____

KSC ____

LaRC ____

JSC ____

JPL ____

HQ _X_

GSFC ____

SSC ____

NUMBER OF PARTICIPANTS: 91

COST (FY 1987): $30,343

FUNDING ORGANIZATION: Office of Equal Opportunity Programs

OTHER PERTINENT DATA:

Underrepresented Minorities											
Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
34	51	5	0							0	1

PROGRAM: University of DC Saturday Academy

LEVEL: Elementary, Secondary, Teachers

DESCRIPTION:

The purpose of this Program is to enhance the math and science preparation of academically talented minority group (7th through 9th grade) students in the DC metropolitan area school systems. Through intensive 10-week sessions in the fall and spring semesters and during a 5-week summer session, students are exposed to classes in mathematics, computer science, and engineering.

Parents are required to attend a minimum of 3 academic years and one summer session to become familiar with engineering/science requirements, and advantages of careers in these fields.

Additionally, the academy provides a Teacher Resource component designed to expose 40 5th and 6th grade math and science teachers access to the methodolgy used by the Academy teaching staff, and to provide materials and other support necessary to improve the teachers' performance back in the classroom. This component of the Academy is funded in part by NASA.

ARC _____
LeRC _____
LaRC _____
JPL _____
GSFC X
MSFC _____
KSC _____
JSC _____
HQ X
SSC _____

NUMBER OF PARTICIPANTS: 275

COST (FY 1987): $112,000

FUNDING ORGANIZATION: Office of Equal Opportunity Programs (OEOP)

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
112	123	7	13			3	7			3	7

PROGRAM: Urban Community Enrichment Program (UCEP)

LEVEL: Elementary, Secondary, Teachers

DESCRIPTION:

The UCEP program, conducted in urban areas where minority students are concentrated, is designed to provide aerospace experiences to middle school students. Operating out of two Aerospace Education Services Project Units (Spacemobiles), UCEP Science Specialists reach two or three urban areas each year and visit 15-20 middle schools in each city.

ARC _____
MSFC _____
LeRC _____
KSC _____
LaRC _____
JSC _____
JPL _____
HQ __X__
GSFC _____
SSC _____

COST (FY 1987): $70,000

FUNDING ORGANIZATION: Educational Affairs Division

PROGRAM: Workshop for Teachers from American Indian Schools

LEVEL: Elementary and Secondary Teachers

DESCRIPTION:

This one-week program is conducted by the American Indian Science and Engineering Society (AISES). The objectives of this program, which includes technical assistance in instructional materials development, are accomplished with the aid of workshops, lectures, films, discussions, field trips and peer in-service training sessions. It is designed for teachers who teach science in American Indian schools with which AISES has an on-going relationship.

ARC	____	LeRC	____	LaRC	____	JPL	____	GSFC	____
MSFC	____	KSC	____	JSC	____	HQ	X	SSC	____

NUMBER OF PARTICIPANTS: 20

COST (FY 1987): $30,000

FUNDING ORGANIZATION: Office of Equal Opportunity Programs

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
				0	8					6	6

PROGRAM: Xavier University Engineering Bridge Program

LEVEL: Undergraduate

DESCRIPTION:

The purpose of this program, which is run in cooperation with Xavier University, is to better prepare graduating high school minority students and thereby increase their retention in engineering curriculum. The program consists of classes, lab experiences, career information presentations, study skills counseling, and peer tutoring practice. The program provides for an academic year followup that stresses interaction with University faculty and tutoring in courses that have historically proven difficult or in individual problem areas.

There are a number of different target audiences, including 25 "rising seniors" who are seeking to excel and earn early college credits, participants in Xavier's pre-engineering program who are commited to and prepared to pursue a college-level technical program, and underprepared candidates in need of the enhancement opportunities available through the Bridge Program.

ARC ____
MSFC ____
LeRC ____
KSC ____
LaRC ____
JSC ____
JPL ____
HQ X
GSFC ____
SSC ____

NUMBER OF PARTICIPANTS: 46

COST (FY 1987): $34,970

FUNDING ORGANIZATION: Office of Equal Opportunity Programs

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
20	26										

PROGRAM: Graduate Degrees for Minorities in Engineering (GEM)

LEVEL: Graduate

DESCRIPTION:

The goal of GEM is to increase the number of ethnic minority students with advanced degrees in engineering. Lewis and Ames have an agreement with the National Consortium for Graduate Degrees for Minorities in Engineering, Inc. to provide summer work opportunities and to help finance graduate studies towards a master's degree in one of the engineering disciplines for GEM participants. Students can return for summer employment each summer until graduation providing they maintain academic and work requirements.

ARC X
MSFC ____
LeRC X
KSC ____
LaRC ____
JSC ____
JPL ____
HQ ____
GSFC ____
SSC ____

PROGRAM: Graduate Student Researchers Program (Underrepresented Minority Focus)

LEVEL: Graduate

DESCRIPTION:

The purpose of this program is to increase substantially the number of graduate-level scientists and engineers from underrepresented minority groups to meet the current workforce needs and to help off-set the projected growing shortage of highly trained scientists and engineers for the year 2000 and beyond. University faculty/principal investigators working on NASA research, who have a need for additional student involvement on their projects, are encouraged to seek out and involve talented underrepresented minority students. These students are provided fellowship stipends and work on NASA research. They are supported for 3 years or until they receive an advanced degree.

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL X
HQ X
GSFC X
SSC X

NUMBER OF PARTICIPANTS: 57

COST (FY 1987): $1,026,000

FUNDING ORGANIZATION: Office of Equal Opportunity Programs

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
21	5	21	4	1	3	1	1				

PROGRAM: Historically Black Colleges and Universities (HBCU)

LEVEL: Undergraduate and Graduate

DESCRIPTION:

The purpose of this program is to increase the relationship and involvement of the HBCUs in NASA-sponsored scientific research and to provide exposure and opportunities for students at HBCUs to participate in the research environment. It is hoped these students will undertake academic studies and consider careers in science and engineering and other space-related sciences.

Students are employed or assigned to NASA centers based on specific program requirements and provided opportunities to work in many capacities relevant to on-going NASA research activities. Many students are assigned mentors or technical officers who provide technical guidance and supervision on their assignments.

ARC __X__

MSFC __X__

LeRC __X__

KSC __X__

LaRC __X__

JSC __X__

JPL __X__

HQ __X__

GSFC __X__

SSC __X__

NUMBER OF PARTICIPANTS: 205

COST (FY 1987): $6,934,167

FUNDING ORGANIZATION: Office of Equal Opportunity Programs

PROGRAM: Summer High School Apprenticeship Research Program (SHARP)

LEVEL: Secondary

DESCRIPTION:

This program offers an 8-week summer session which provides an opportunity for minority students living within normal commuting distances of NASA installations to work as apprentices in a research environment. Students work under the direction of agency engineers or scientists who serve as mentors.

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC ____
JPL ____
HQ X
GSFC X
SSC ____

NUMBER OF PARTICIPANTS: 145

COST (FY 1987): $225,000

FUNDING ORGANIZATION: Educational Affairs Division

OTHER PERTINENT DATA:

Underrepresented Minorities					
Black	Hispanic	Native American	Pacific Islander	Alaskan Natives	Non-Minority
68	9		25		43

PROGRAM: Summer Institute for Computer Simulation Network (SIMNET)

LEVEL: Undergraduate, Graduate, Faculty

DESCRIPTION:

The purpose of this program is to bring together the SIMNET Nodes in an operational setting to promote understanding of the benefits of the network. This is accomplished by increasing participants' knowledge of the design, operations, and capability of the Simulation (computer) Network; providing supervised (by NASA technical advisors) practical experience in the utilization of SIMNET; and by increasing the utilization of modern computing techniques in the teaching and learning processes at participating HBCUs.

Faculty and students pair off and work along with NASA engineers or scientists on research problems of mutual interest that have a high potential for continuation and solution through applications of SIMNET.

Eight weekly seminars are held during the summer institute. The primary focus of the series is to merge the actual features of SIMNET with the fundamental concepts of simulation and modeling.

ARC ______
MSFC ______
LeRC ______
KSC ______
LaRC __X__
JSC ______
JPL ______
HQ __X__
GSFC __X__
SSC ______

NUMBER OF PARTICIPANTS: 16

COST (FY 1987): $121,200

FUNDING ORGANIZATION: Office of Equal Opportunity Programs

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
10	3	1	0	2	0						

PROGRAM: Aerospace Fellows

LEVEL: Undergraduate

DESCRIPTION:

The objective of this program is to increase awareness of the NASA mission and career opportunities for minority engineering students. The program contributes to improving motivation and retention by stimulating competiton. Academic performance, high grade point average, and interest in the NASA mission are major factors in choosing NASA-aerospace fellows. Recipients of NASA fellowships spend a useful and profitable summer internship at the Centers. They are awarded full tuition scholarships upon their return to college.

ARC ____
MSFC _X_
LeRC ____
KSC ____
LaRC ____
JSC ____
JPL ____
HQ ____
GSFC ____
SSC ____

NUMBER OF PARTICIPANTS: 2

COST (FY 1987): $20,000

FUNDING ORGANIZATION: Office of Equal Opportunity Programs and George C. Marshall Space Flight Center

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
0	2										

PROGRAM: Brevard County Job Corps

LEVEL: Secondary

DESCRIPTION:

This program, conducted by Brevard County, Florida, attempts to employ minority young people throughout the County for the summer. Kennedy Space Center's participation sends representatives to the north, central, and south part of the County to brief and counsel those interested in obtaining employment with the Federal Government.

ARC ______
MSFC ______
LeRC ______
KSC X
LaRC ______
JSC ______
JPL ______
HQ ______
GSFC ______
SSC ______

NUMBER OF PARTICIPANTS: 350

PROGRAM: Engineering Concepts Institute

LEVEL: Undergraduates

DESCRIPTION:

The purpose of this program, which is run in cooperation with Florida A&M University, is to assist high school seniors and university freshmen with improving math/science competency, enhancing study and critical thinking skills, strengthening leadership skills, and building self-esteem. These concepts, which are accomplished through 8-week summer classes, field trips to engineering work sites, a study skill course, leadership training, and peer counseling and tutoring, are intended to improve academic performance once students become emersed in their engineering curriculum.

ARC _____	LeRC _____	LaRC _____	JPL _____	GSFC _____
MSFC _____	KSC X	JSC _____	HQ _____	SSC _____

NUMBER OF PARTICIPANTS: 23

COST (FY 1987): $35,011

FUNDING ORGANIZATION: Office of Equal Opportunity Programs and KSC

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
20	3										

PROGRAM: Engineering Enrichment Program

LEVEL: Secondary, Undergrad

DESCRIPTION:

This program, in cooperation with Morgan State University, is geared toward high school graduates. They are recruited from the Baltimore/Washington area for an 8-week summer academic program designed to strengthen their backgrounds and prepare them for a smooth transition to college. The program includes mandatory tutoring and study periods and diagnostic tests in English and mathematics. Additionally, students are provided with academic assistance during their freshman year of college. Ten students are provided with a stipend during the summer session as well as tuition assistance during their freshman work assignments at Goddard Space Flight Center.

ARC ______
MSFC ______
LeRC ______
KSC ______
LaRC ______
JSC ______
JPL ______
HQ ______
GSFC __X__
SSC ______

NUMBER OF PARTICIPANTS: 10

COST (FY 1987): $70,000

FUNDING ORGANIZATION: Goddard Space Flight Center

* * *

PROGRAM: External Experience for Students in the NIH-Sponsored Minority Access to Research Careers (MARC) Program

LEVEL: Undergraduates

DESCRIPTION:

This program provides an opportunity for senior honor students in minority colleges who are planning a career in biomedical research to have exposure to the biomedical research program in NASA. The NIH MARC Program provides support to minority colleges for honors students who are planning to obtain the Ph.D. degree in a biomedical field. These students receive a monthly stipend from their school during the summer between their junior and senior years.

ARC ______
MSFC ______
LeRC ______
KSC __X__
LaRC ______
JSC ______
JPL ______
HQ ______
GSFC ______
SSC ______

PROGRAM: Head Start Educators Program

LEVEL: Pre-Primary

DESCRIPTION:

This program is an introduction to elementary science principles and includes workshops and tours of the Kennedy Space Center for Head Start Teachers from various counties in Florida.

PARTICIPATING CENTERS:

ARC ______
MSFC ______
LeRC ______
KSC __X__
LaRC ______
JSC ______
JPL ______
HQ ______
GSFC ______
SSC ______

PROGRAM: Lincoln University Aerospace Engineering Recruitment (LASER)

LEVEL: Secondary, Undergrad

DESCRIPTION:

The purpose of this Program is to diagnose and strengthen students' academic skills, and to acquaint the student with the workload, performance expectations, and competition they will face in the study of engineering. The Program provides selected high school students academic reinforcement during a 10-week period of the summer before matriculation and tuition assistance for their freshman year. Students are at Lincoln for 3 years and are placed at Drexel, Penn State, or Lafayette University for an additional 2 years to complete requirements for an engineering degree. Students are given tuition assistance and summer employment, often at NASA.

ARC _____
MSFC _____
LeRC _____
KSC _____
LaRC _____
JSC _____
JPL _____
HQ _____
GSFC X
SSC _____

NUMBER OF PARTICIPANTS: 10

COST (FY 1987): $60,000

FUNDING ORGANIZATION: Office of Equal Opportunity Programs and GSFC

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
5	5										

PROGRAM: Mathematics and Engineering Science Achievement (MESA)

LEVEL: Secondary

DESCRIPTION:

This program, conducted in cooperation with the University of New Mexico, encourages minority students to excel in science and math.

ARC _____
MSFC _____
LeRC _____
KSC X
LaRC _____
JSC _____
JPL _____
HQ _____
GSFC _____
SSC _____

NUMBER OF PARTICIPANTS: 85

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
6	7	30	34	3	5						

PROGRAM: Minority Engineering Student Orientation Day

LEVEL: Undergraduate

DESCRIPTION:

The purpose of this program is to establish a relationship with four local schools which have a large resource of Black, Hispanic, and some Native American engineering students. Jet Propulsion Laboratory Recruitment and Placement Section and Affirmative Action Program Office have developed a student orientation day to expose minority students to the work at Jet Propulsion Laboratory. The goal is to have a total of 40-50 students from each of the schools. The Los Angeles Council for Black Professional Engineers and the Society of Hispanic Professional Engineers encourage their student chapters to participate in this program.

ARC ______
MSFC ______
LeRC ______
KSC ______
LaRC ______
JSC ______
JPL __X__
HQ ______
GSFC ______
SSC ______

NUMBER OF PARTICIPANTS: 120

COST (FY 1987): $3,500

FUNDING ORGANIZATION: Jet Propulsion Laboratory

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
15	5	55	29	5	3	5	3				

PROGRAM: NASA's Unique Resident Tutoring for Up-and-Coming Replacement Engineering (NURTURE)

LEVEL: Secondary

DESCRIPTION:

The purpose of this program is to introduce Brevard County, Florida ninth grade students to mathematics, science, and engineering disciplines and to encourage them to pursue careers in these fields. Students are assigned to teams and work side by side with NASA engineers throughout their high school years. They visit the center four times a year.

ARC ____
LeRC ____
LaRC ____
JPL ____
GSFC ____
MSFC ____
KSC X
JSC ____
HQ ____
SSC ____

NUMBER OF PARTICIPANTS: 20

* * *

PROGRAM: Public Service Intern Program (PSI)

LEVEL: Graduate

DESCRIPTION:

This 10-week work experience, run in cooperation with Howard University, is designed for graduate students in the School of Business and Public Administration. The students serve in a variety of administrative positions including personnel administration, financial management, resource management, and management information systems.

Approximately eight students are sponsored for a summer internship. Each student is placed under the supervision of Goddard professional administrators where they are assigned a project to complete by the program's end.

ARC ____
LeRC ____
LaRC ____
JPL ____
GSFC X
MSFC ____
KSC ____
JSC ____
HQ ____
SSC ____

NUMBER OF PARTICIPANTS: 8

COST (FY 1987): $30,000

FUNDING ORGANIZATION: Goddard Space Flight Center

PROGRAM: Summer Graduate Intern Program

LEVEL: Graduate

DESCRIPTION:

The Summer Graduate Intern Program is a 10-week summer activity which provides entering or enrolled science and engineering graduate students an opportunity to gain research experience on problems of interest to Goddard. The program is conducted in cooperation with Morgan State University. Students receive a stipend.

ARC ____
MSFC ____
LeRC ____
KSC ____
LaRC ____
JSC ____
JPL ____
HQ ____
GSFC X
SSC ____

NUMBER OF PARTICIPANTS: 7

COST (FY 1987): $56,000

FUNDING ORGANIZATION: Office of Equal Opportunity Programs and GSFC

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
3	2	1	0							0	1

127

PROGRAM: Summer Institute in Computer Applications (SICA)

LEVEL: Undergraduate

DESCRIPTION:

The purpose of this program is to expose more minority undergraduate students to the technical applications of the computer and computer programming, thereby increasing employment potential at NASA Goddard.

The goals of this program, conducted by Bowie State College, are: (a) to increase students' competency in the use of FORTRAN; (b) to provide students with the support necessary to achieve "good" or "very good" performance ratings from supervisors in a research setting; and (c) to increase students' post-Institute involvement in research at their undergraduate institutions.

Undergraduate minority students who attend universities in or who are residents of the Baltimore/Washington area, are eligible to participate. Three weeks of formal instruction in computer concepts and FORTRAN programming is conducted. A 7-week work experience is supervised by a Goddard Space Flight Center scientist. Seminars are presented by Goddard scientists.

ARC ____

MSFC ____

LeRC ____

KSC ____

LaRC ____

JSC ____

JPL ____

HQ ____

GSFC X

SSC ____

NUMBER OF PARTICIPANTS: 15

COST (FY 1987): $55,885

FUNDING ORGANIZATION: Office of Equal Opportunity Programs and GSFC

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
6	4	2	3								

PROGRAM: Summer Minority High School Program

LEVEL: Secondary, Undergrad

DESCRIPTION:

Graduating high school seniors interested in pursuing degrees in engineering or computer science are employed during the summer months following high school graduation. Following summer employment, students are placed on leave of absence. After successful completion of their freshman year, they are encouraged to pursue employment in the summer, CO-OP, or Academic Part-Time Programs.

ARC ____
MSFC ____
LeRC ____
KSC ____
LaRC ____
JSC ____
JPL X
HQ ____
GSFC ____
SSC ____

NUMBER OF PARTICIPANTS: 13

FUNDING ORGANIZATION: Jet Propulsion Laboratory

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
2	2	7	2								

PROGRAM: Upward Bound Program

LEVEL: Secondary

DESCRIPTION:

Jet Propulsion Laboratory has provided work experience since 1981 for 10 high school students through the Upward Bound Program which is funded by the Department of Education.

The purpose of the program is to provide 6 weeks of "real world", hands-on experience. The schedule is 4 hours per day at Jet Propulsion Laboratory and the remaining 4 hours at the local college.

The students chosen come from economically deprived homes and are selected on the basis of their interest in the professional disciplines at Jet Propulsion Laboratory.

ARC ______
MSFC ______
LeRC ______
KSC ______
LaRC ______
JSC ______
JPL __X__
HQ ______
GSFC ______
SSC ______

NUMBER OF PARTICIPANTS: 10

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
		6	4								

Employment Programs

Employment Programs - Executive Summary

The 19 programs described in this section involve the employment of high school, undergraduate, and graduate students, with most of the programs geared towards the undergraduate population. The largest single program (930 participants) is the Baccalaureate Cooperative Education Program, an agency-wide partnership with many of the Nation's colleges and universities.

In addition to the chance to work side-by-side with NASA engineers and scientists, NASA employment programs provide a variety of other opportunities for the participants. Eleven programs provide paid, career-related experience in science and engineering fields (for example, Federal Junior Fellowships). Many of these programs combine academic-year and summer employment, usually offering part-time work (or alternating work/study periods) during the academic year and full-time work during the summer (Pre-College Cooperative Education). Some provide summer-only work experience (Summer Employment Program). The opportunity for conversion to permanent employee status is made available through such feeder programs as the Secretarial Science Cooperative Education Program.

Several programs are run in cooperation with other institutions, like the Claremont Graduate School, Gallaudet University, and MIT. Other programs reach out to diverse populations such as Stay-In-School for economically disadvantaged students; Summer Program for Handicapped College Students; and New View, a program designed for re-entry or career-transition adults.

The employment programs described in this section play an important part in NASA's planning for the future workforce. Graduating co-op students alone account for 40-50 percent of NASA's additions to the permanent R&D workforce each year.

Further information about the programs described in this section can be obtained from the Headquarters Office of Management, Personnel Programs and the Center Personnel Officers listed below.

NASA Headquarters Office of Management Code NP Washington, DC 20546	Mr. Philip D. Waller (202) 453-2500
Ames Research Center Mail Stop 241-9 Moffett Field, CA 94035	Mr. Robert L. Pike (415) 694-5612
Goddard Space Flight Center Code 220 Greenbelt, MD 20771	Mr. Roger Jenkin (301) 286-5025
Jet Propulsion Laboratory Mail Stop 180-300 4800 Oak Grove Drive Pasadena, CA 91109	Mr. Robert E. Sutherland (818) 354-4102

Johnson Space Center Code AH Houston, TX 77058	Mr. Jack R. Lister (713) 483-2358
Kennedy Space Center Code PM KSC, FL 32899	Mr. Richard E. Uhrmann (305) 867-3365
Langley Research Center Mail Stop 120 Hampton, VA 23665	Mr. Irwin J. Schauer (804) 865-3278
Lewis Research Center Mail Stop 500-314 21000 Brookpark Rd. Cleveland, OH 44135	Mr. Paul E. Cline (216) 433-2515
Marshall Space Flight Center Code CM01 MSFC, AL 38512	Mr. Charles R. Perry (205) 544-5009
Stennis Space Center Building 2425 SSC, MS 39529	Mr. Ronnie E. Carter (601) 688-2336

EMPLOYMENT PROGRAMS - OVERVIEW

Activity	Participants	Organization	Level	Cost FY 87	Funding Org.	Notes
Baccalaureate Cooperative Education Program	930	HQ and all centers except SSC	undergrad	N/A	N/A	Underrep. Minor. Black: 45 M/16 F Hispanic: 20 M/ 7 F N. Amer.: 3 M/0 F P. Islander: 16 M/8 F Non-Minor: 569 M/246 F
Engineering Technician Cooperative Education Program	72	LeRC, KSC, LaRC, GSFC	undergrad	N/A	N/A	
Federal Junior Fellowship Program	100	ARC, MSFC, LeRC, KSC, LaRC, JSC, GSFC, HQ	undergrad	N/A	N/A	Underrep. Minor. Black: 16 M/22 F Hispanic: 4 M/0 F P. Islander: 6 M/5 F Non-Minor.: 19 M/28 F
Graduate Cooperative Education Program	38	MSFC, LeRC, KSC, LaRC, JSC, GSFC, HQ	grad	N/A	N/A	Underrep. Minor. Black: 1 M/5 F Hispanic: 2 M/1 F P. Islander: 2 M/0 F Non-Minor.: 23 M/4 F
Pre-College Cooperative Educ. Program (Pre-Co-op)	46	KSC, JSC, GSFC	second. undergrad	N/A	N/A	
Secretarial Science Cooperative Educational Program	88	MSFC, LeRC KSC, LaRC, GSFC, HQ	undergrad	N/A	N/A	

EMPLOYMENT PROGRAMS - OVERVIEW (cont.)

Activity	Participants	Organization	Level	Cost FY 87	Funding Org.	Notes
Stay-in-School Program	270	ARC, LeRC, KSC, LaRC, JSC, HQ, GSFC	second. undergrad	N/A	N/A	Underrep. Minor. Black: 25 M/142 F Hispanic: 4 M/9 F N. Amer.: 2 M/1 F P. Islander: 9 M/16 F Non-Minor.: 13 M/49 F
Summer Aide Program	114	ARC, LeRC KSC, JSC, HQ	second.	N/A	N/A	
Summer Employment Program	110	ARC, LeRC KSC, LaRC, JSC	second. undergrad	N/A	N/A	
Volunteer Service Program	72	HQ and all centers except JPL	second. undergrad grad	N/A	N/A	
Academic Part-Time Program	266	JPL	second. undergrad grad postgrad faculty	N/A	N/A	Underrep. Minor. Black: 6 M/11 F Hispanic: 24 M/20 F N. Amer.: 1 M/2 F P. Islander: 25 M/18 F Non-Minor.: 92 M/67 F
Aerospace Summer Intern	23	JSC	undergrad grad	N/A	N/A	Underrep. Minor. Hispanic: 1 M/0 F P. Islander: 1M/1 F Non-Minor.: 13 M/7 F
Foothill/DeAnza Community College District Professional Office Careers Program	20	ARC	undergrad	N/A	N/A	

EMPLOYMENT PROGRAMS - OVERVIEW (cont.)

Activity	Participants	Organization	Level	Cost FY 87	Funding Org.	Notes
Harvey Mudd Math and Engineering Clinic; Claremont Grad. School Math Clinic	N/A	JPL	undergrad grad	N/A	N/A	
Massachusetts Institute of Technology Engineering Internship Program	5	JPL	undergrad grad	N/A	N/A	
New View	15	ARC	undergrad	N/A	N/A	
Summer Employment for the Handicapped	8	JSC	second. undergrad grad general public	N/A	N/A	Underrep. Minor. Black: 1 M/2 F N. Amer.: 0 M/1 F Non-Minor.: 2 M/2 F
Summer Program for Handicapped College Students	8	GSFC	undergrad	N/A	N/A	
Worker Trainee Opportunity Program	4	LeRC	second. undergrad	N/A	N/A	

Number of Programs 19	Participants 2,189	Multi-center 10 Single-center 9	Second 1 Undergrad 7 Grad 1 Mix 10

PROGRAM: Baccalaureate Cooperative Education Program

LEVEL: Undergraduate

DESCRIPTION:

Cooperative education integrates college-level academic study with periods of meaningful full-time work experience. This is achieved through a working agreement between each Center and a number of universities. The agreement allows the students, through the interaction of both study and work experiences, to enhance their academic knowledge, personal development, and professional preparation.

After graduation, co-ops can be noncompetitively converted to permanent employment. Graduating "co-op's" constitute 40-50 percent of our engineering and science trainee population each year.

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL X
HQ X
GSFC X
SSC ____

NUMBER OF PARTICIPANTS: 930

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
45	16	20	7	3	0	16	8			569	246

PROGRAM: Engineering Technician Cooperative Education Program

LEVEL: Undergraduate

DESCRIPTION:

This program combines periods of study at a community college with periods of study-related employment for qualified students pursuing an Associate of Arts degree in selected technical support fields.

ARC ____
MSFC ____
LeRC X
KSC X
LaRC X
JSC ____
JPL ____
HQ ____
GSFC X
SSC ____

NUMBER OF PARTICIPANTS: 72

PROGRAM: Federal Junior Fellowship Program

LEVEL: Undergraduate

DESCRIPTION:

This program is designed to provide career-related summer and vacation employment for students who need these earnings to attend college. The Federal Junior Fellowship Program puts the "earn-as-you-learn" concept into practice. Fellows are initially appointed at the GS-2 level and must complete requirements for graduation within 5 years from the date of enrolling in college. There is opportunity for non-competitive conversion to permanent employment after graduation.

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL _____
HQ X
GSFC X
SSC _____

NUMBER OF PARTICIPANTS: 100

OTHER PERTINENT DATA:

Underrepresented Minorities										Non-Minority	
Black		Hispanic		Native American		Pacific Islander		Alaskan Natives			
M	F	M	F	M	F	M	F	M	F	M	F
16	22	4	0			6	5			19	28

PROGRAM: Graduate Cooperative Education Program

LEVEL: Graduate

DESCRIPTION:

This program provides for alternating periods of work and study-related employment for qualified students pursuing graduate degrees. The student's work experience must be accepted by the school as part of the requirement for completion of the degree.

Graduating students may be eligible for non-competitive conversion to permanent employment.

ARC ____
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL ____
HQ X
GSFC X
SSC ____

NUMBER OF PARTICIPANTS: 38

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
1	5	2	1			2	0			23	4

PROGRAM: Pre-College Cooperative Education Program (Pre-Co-op)

LEVEL: Secondary/Undergraduate

DESCRIPTION:

Graduating high school seniors who are interested in pursuing degrees in engineering are employed during the summer months following high school graduation. Following this summer employment period, the students are placed in a Leave Without Pay (LWOP) status for their freshman year. After successful completion of the freshman academic year, students transition into the Baccalaureate Cooperative Training Program.

ARC ______
MSFC ______
LeRC ______
KSC X
LaRC ______
JSC X
JPL ______
HQ ______
GSFC X
SSC ______

NUMBER OF PARTICIPANTS: 46

* * *

PROGRAM: Secretarial Science Cooperative Educational Program

LEVEL: Undergraduate (Jr. College)

DESCRIPTION:

This program combines periods of study at colleges with periods of study-related employment for qualified students pursuing an Associate of Arts degree in secretarial science. Following graduation, students may be noncompetitively converted to permanent employment at the GS-4 level.

ARC ______
MSFC X
LeRC X
KSC X
LaRC X
JSC ______
JPL ______
HQ X
GSFC X
SSC ______

NUMBER OF PARTICIPANTS: 88

PROGRAM: Stay in School Program

LEVEL: Secondary/Undergraduate

DESCRIPTION:

This program provides part-time jobs for economically disadvantaged youths. Students from families which meet the economic guidelines are referred to NASA by their high school program coordinators for employment consideration. Students are provided on-the-job training and experience, working up to 20 hours a week during the school year and 40 hours a week during the summer.

ARC X
MSFC ____
LeRC X
KSC X
LaRC X
JSC X
JPL ____
HQ X
GSFC X
SSC ____

NUMBER OF PARTICIPANTS: 270

OTHER PERTINENT DATA:

Underrepresented Minorities											
Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
25	142	4	9	2	1	9	16			13	49

* * *

PROGRAM: Summer Aide Program

LEVEL: Secondary

DESCRIPTION:

Economically disadvantaged high school students work at Centers during the summer in clerical positions.

ARC X
MSFC ____
LeRC X
KSC X
LaRC ____
JSC X
JPL ____
HQ X
GSFC ____
SSC ____

NUMBER OF PARTICIPANTS: 114

PROGRAM: Summer Employment Program

LEVEL: Secondary, Undergraduate

DESCRIPTION:

This program provides temporary employment opportunities for college students in clerical, para-professional, professional, technical, and administrative work. Participants receive on-the-job training, orientation to Center functions, and other training activities as appropriate.

ARC	X	LeRC	X	LaRC	X	JPL		GSFC	
MSFC		KSC	X	JSC	X	HQ		SSC	

NUMBER OF PARTICIPANTS: 110

* * *

PROGRAM: Volunteer Service Program

LEVEL: Secondary, Undergraduate, Graduate

DESCRIPTION:

This program provides for performance of uncompensated services by a student with the permission of the institution at which the student is enrolled. Students are usually placed in areas of career interest in science and engineering during the school year and in the summer.

ARC	X	LeRC	X	LaRC	X	JPL		GSFC	X
MSFC	X	KSC	X	JSC	X	HQ	X	SSC	X

NUMBER OF PARTICIPANTS: 72

PROGRAM: Academic Part-Time Program

LEVEL: Secondary, Undergraduate, Graduate, Post-Graduate, University Faculty

DESCRIPTION:

The Academic Part-Time Program (APT) affords students and faculty members an opportunity to work in the research and development environment of the aerospace industry and related technological fields. Participants are permitted to work up to 30 hours per week (full time during academic vacations). Since JPL is a technical organization, the APT program is primarily interested in college students having majors in science, engineering, or math. Other majors, particularly business administration, may be accepted provided they correspond to the needs of the Laboratory.

ARC ______
MSFC ______
LeRC ______
KSC ______
LaRC ______
JSC ______
JPL X
HQ ______
GSFC ______
SSC ______

NUMBER OF PARTICIPANTS: 263

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
6	11	24	20	1	2	25	18			92	67

PROGRAM: Aerospace Summer Intern

LEVEL: Undergraduate, Graduate

DESCRIPTION:

This program combines academically related work experiences and a specifically designed lecture/seminar series. Participants are either undergraduates who have completed at least 2 years of college or students who will be entering graduate school in the fall.

ARC	____	LeRC	____	LaRC	____	JPL	____	GSFC	____
MSFC	____	KSC	____	JSC	X	HQ	____	SSC	____

NUMBER OF PARTICIPANTS: 23

OTHER PERTINENT DATA:

Underrepresented Minorities											
Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
		1				1	1			13	7

* * *

PROGRAM: Foothill/DeAnza Community College District Professional Office Careers Program

LEVEL: Undergraduates

DESCRIPTION:

This program provides a 1-year internship to secretarial majors at the colleges. Interns work up to 20 hours per week during the school year and 40 hours per week during the summer. They must continue taking related courses during their internship and maintain at least a 2.5 grade point average.

ARC	X	LeRC	____	LaRC	____	JPL	____	GSFC	____
MSFC	____	KSC	____	JSC	____	HQ	____	SSC	____

NUMBER OF PARTICIPANTS: 20

PROGRAM: Harvey Mudd Math and Engineering Clinic, Claremont Graduate School Math Clinic

LEVEL: Undergraduate, Graduate

DESCRIPTION:

Jet Propulsion Laboratory contracts with Harvey Mudd or The Claremont Graduate School to have student teams, consisting of undergraduate and graduate students, solve real scientific or mathematical problems.

PARTICIPATING CENTERS:

ARC	_____	LeRC	_____	LaRC	_____	JPL	X	GSFC	_____
MSFC	_____	KSC	_____	JSC	_____	HQ	_____	SSC	_____

* * *

PROGRAM: Massachusetts Institute of Technology Engineering Internship Program

LEVEL: Undergraduate, Graduate

DESCRIPTION:

At the end of their sophomore year, students are employed periodically over a 3-year period (three work tours alternating with undergraduate and graduate study). During this time, students develop, in cooperation with their work supervisor and advisor, a thesis based on research work achieved during their work tours. Upon completion of this program, students receive both a bachelor's and master's degree.

ARC	_____	LeRC	_____	LaRC	_____	JPL	X	GSFC	_____
MSFC	_____	KSC	_____	JSC	_____	HQ	_____	SSC	_____

NUMBER OF PARTICIPANTS: 5

PROGRAM: New View

LEVEL: Undergraduate

DESCRIPTION:

This program provides a 1-year internship for re-entry or career transition adult students seeking professional careers in scientific, technical, or business areas. The internship (20 hours a week during the school year; 40 hours during the summer) is integrated with community college curricula and provides job-seeking and counseling services.

ARC X
MSFC ____
LeRC ____
KSC ____
LaRC ____
JSC ____
JPL ____
HQ ____
GSFC ____
SSC ____

NUMBER OF PARTICIPANTS: 15

PROGRAM: Summer Employment for the Handicapped

LEVEL: Secondary, Undergraduate, Graduate, General Public

DESCRIPTION:

This program provides temporary summer employment to handicapped persons to enable them to gain work experience. Certification is made by the Texas Rehabilitation Commission.

ARC ______
MSFC ______
LeRC ______
KSC ______
LaRC ______
JSC X
JPL ______
HQ ______
GSFC ______
SSC ______

NUMBER OF PARTICIPANTS: 8

OTHER PERTINENT DATA:

Underrepresented Minorities

Black		Hispanic		Native American		Pacific Islander		Alaskan Natives		Non-Minority	
M	F	M	F	M	F	M	F	M	F	M	F
1	2				1					2	2

PROGRAM: Summer Program for Handicapped College Students

LEVEL: Undergraduate

DESCRIPTION:

In cooperation with Gallaudet University, a summer program is sponsored for handicapped college students. Their work experiences at Goddard correspond to the students' academic training, career goals, and the needs of the Center. The experience provides managers and co-workers with the resources and assistance needed to be competent and comfortable in the supervision and integration of handicapped employees. Students are provided with a stipend for 10 weeks. Each student, under an assigned supervisor, performs work assignments towards the completion of an assigned research project.

ARC ______
MSFC ______
LeRC ______
KSC ______
LaRC ______
JSC ______
JPL ______
HQ ______
GSFC __X__
SSC ______

NUMBER OF PARTICIPANTS: 8

* * *

PROGRAM: Worker Trainee Opportunity Program

LEVEL: Secondary, Undergraduate

DESCRIPTION:

The Worker Trainee program is a developmental program which consists primarily of on-the-job training at the entry level in various fields such as clerical and trades occupations. Trainees are not counted against FTE until they have been on the job for 1 year.

PARTICIPATING CENTERS:

ARC ______
MSFC ______
LeRC __X__
KSC ______
LaRC ______
JSC ______
JPL ______
HQ ______
GSFC ______
SSC ______

NUMBER OF PARTICIPANTS: 4

Public Education Programs

Public Education Programs - Executive Summary

The 17 programs described in the following pages comprise a large part of NASA's public education efforts. These no-cost (or in some cases, low-cost) services provide general information about NASA programs and aerospace-related topics through such forms as publications, audiovisual resources, speakers, and workshops.

Seven of these programs are conducted agency-wide, like the publications services. The rest are sponsored by one or more centers. For example, the Educational Programs for the Handicapped are supported by the Lewis Research Center. Most of these programs are designed specifically for use by teachers and students in educational institutions.

Using the latest technology, including satellite broadcasts and computer bulletin boards, NASA's public education program reaches millions of people. In 1987 alone, 3.1 million people visited the Information Centers at the various NASA field centers.

These public education services play an important role in NASA's efforts to inform the general public about the history of the aerospace program and the possibilities for future exploration.

Further information about the programs described in this section can be obtained from the Headquarters Office of Communication and the Center Public Affairs Officers listed below.

NASA Headquarters Office of Communications Code L Washington, DC 20546	Ms. Shirley M. Green (202) 453-8364
Ames Research Center Mail Stop 204-12 Moffett Field, CA 94035	Mr. Peter W. Waller (415) 694-5091
Goddard Space Flight Center Mail Code 130 Greenbelt, MD 20771	Ms. Janet Ruff (301) 286-6255
Jet Propulsion Laboratory Mail Stop 180-201 4800 Oak Grove Drive Pasadena, CA 91109	Mr. George Alexander (818) 354-7006
Johnson Space Center Code AP Houston, TX 77058	Mr. Harold Stall (713) 483-3671
Kennedy Space Center Code PA KSC, FL 32899	Mr. Charles Hollinshead (305) 867-2201

Langley Research Center Mail Stop 115 Hampton, VA 23665	Mr. A. Gary Price (804) 865-2932
Lewis Research Center Mail Stop 3-16 21000 Brookpark Rd. Cleveland, OH 44135	Mr. Americo F. Forestieri (216) 433-2942
Marshall Space Flight Center Code CA01 MSFC, AL 38512	Mr. John Taylor (205) 544-0031
Stennis Space Center Code CA01 SSC, MS 39529	Mr. Mack Herring (601) 688-3341

PUBLIC EDUCATION PROGRAMS - OVERVIEW

Activity	Participants	Organization	Level	Cost FY 87	Funding Org.	Notes
Audiovisual Loans	N/A	all centers and HQ	general public	$20,000	N/A	
Materials of Instruction Program	N/A	all centers and HQ	elem/sec teachers	N/A	N/A	
Planetarium Support	N/A	all centers and HQ	general public	N/A	N/A	
Publications	N/A	all centers and HQ	general public	N/A	N/A	
Speakers Bureau	23,444	all centers and HQ	general public	$10,000	N/A	
Visitors Information Centers and Tours	3,099,402	all centers and HQ	general public	N/A	N/A	
Telelecture	11,030 (LaRC)	ARC, LaRC	general public	N/A	N/A	
Youth Programs and Visits	1,460	MSFC, GSFC	elem/sec undergrad	N/A	N/A	
Career Programs	N/A	KSC	all levels	N/A	N/A	
Computer Bulletin Board System	250/month, approx.	LeRC	all	approx. $10,000	HQ/Office of External Affairs	
Educ. Programs for the Handicapped	several thousand	LeRC	all	$10-20,000/yr.	HQ/EAD	

PUBLIC EDUCATION PROGRAMS - OVERVIEW (Cont.)

Activity	Participants	Organization	Level	Cost FY 87	Funding Org.	Notes
Educational Satellite Broadcast	N/A	KSC	general public	N/A	N/A	
Educational Television	millions	LeRC	all	approx. $60,000	LeRC	
Goddard Space Flight Center Film Distrib.	N/A	GSFC	general public	N/A	N/A	
Public Inquiries Program	N/A	HQ	general public	$90,000	N/A	
Special Educ. Programs	10,000 approx.	LeRC	elem/sec teachers general public	N/A	N/A	
Technical Library	N/A	LaRC	general public	N/A	N/A	

Number of Programs	Organization	Cost
17	Agency-wide 6 Multi-center 2 Single-center 9	$200,000

PROGRAM: Audiovisual Loans

LEVEL: General Public

DESCRIPTION:

The NASA centers have color films, slides, videotapes, audio cassettes, and video discs describing various NASA research and development programs and achievements in space. The materials may be borrowed for showing to education, civic, industrial, professional, youth, and similar groups. There is no rental charge. Films loaned by Kennedy Space Center alone are seen by more than 7 million people annually.

PARTICIPATING CENTERS:

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL X
HQ X
GSFC X
SSC X

COST (FY 1987): $20,000

* * *

PROGRAM: Materials of Instruction Program

LEVEL: Elementary, Secondary, Teachers

DESCRIPTION:

This program is designed to assist elementary and secondary schools, and institutions preparing teachers for these schools, in adopting and updating programs and courses about NASA programs and projects.

PARTICIPATING CENTERS:

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL X
HQ X
GSFC X
SSC X

PROGRAM: Planetarium Support

LEVEL: General Public

DESCRIPTION:

NASA supports a number of planetaria within the United States, providing materials and speakers.

PARTICIPATING CENTERS:

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL X
HQ X
GSFC X
SSC X

* * *

PROGRAM: Publications

LEVEL: General Public

DESCRIPTION:

Brochures, pamphlets, fact sheets, lithographs, and other publications are printed by Headquarters and the Centers and distributed to the general public.

PARTICIPATING CENTERS:

ARC X
MSFC X
LeRC X
KSC X
LaRC X
JSC X
JPL X
HQ X
GSFC X
SSC X

PROGRAM: Speakers Bureaus

LEVEL: General Public

DESCRIPTION:

NASA Headquarters and the Centers maintain Speakers Bureaus consisting of employees who give lectures and audiovisual presentations to various public audiences. A large number of these presentations are made to educational groups.

PARTICIPATING CENTERS:

ARC	X	LeRC	X	LaRC	X	JPL	X	GSFC	X
MSFC	X	KSC	X	JSC	X	HQ	X	SSC	X

NUMBER OF PARTICIPANTS: 23,444

COST (FY 1987): $10,000

* * *

PROGRAM: Visitors Information Centers and Tours

LEVEL: General Public

DESCRIPTION:

The Visitors Information Centers feature tours, exhibits, films, and lectures on aeronautics and space technology. About 3.5 million people a year visit these centers. Another 35 million see traveling exhibits.

PARTICIPATING CENTERS:

ARC	X	LeRC	X	LaRC	X	JPL	X	GSFC	X
MSFC	X	KSC	X	JSC	X	HQ	X	SSC	X

NUMBER OF PARTICIPANTS: 3,099,402

PROGRAM: Telelecture

LEVEL: General Public

DESCRIPTION:

This program provides, through a lecturer, slides, or videotapes, a variety of presentations on space and aeronautics topics to audiences around the Nation. In 1987, Langley Research Center alone presented 200 telelectures to 11,030 people.

PARTICIPATING CENTERS:

ARC	X	LeRC		LaRC	X	JPL		GSFC	
MSFC		KSC		JSC		HQ		SSC	

NUMBER OF PARTICIPANTS: 11,030 (LaRC)

* * *

PROGRAM: Youth Programs and Visits

LEVEL: Elementary, Secondary and Undergraduate

DESCRIPTION:

The Educational Affairs offices conduct or participate in special programs such as orientation courses, model rocketry events, youth seminars, and similar aerospace-related projects. These programs are designed to provide opportunities for youth to be exposed to NASA aeronautics and space-related activities.

PARTICIPATING CENTERS:

ARC		LeRC		LaRC		JPL		GSFC	X
MSFC	X	KSC		JSC		HQ		SSC	

NUMBER OF PARTICIPANTS: 1,460

PROGRAM: Career Programs

LEVEL: All levels

DESCRIPTION:

Career programs are conducted at area schools and through civic organizations to help the public understand the varied career opportunities at the Kennedy Space Center.

PARTICIPATING CENTERS:

ARC ____ LaRC ____ GSFC ____
LeRC ____ JPL ____
MSFC ____ JSC ____ SSC ____
KSC _X_ HQ ____

* * *

PROGRAM: Computer Bulletin Board System

LEVEL: All levels

DESCRIPTION:

A Computer Bulletin Board System has just begun operation at the Lewis Research Center, providing a source of information on NASA programs and activities for area educators and students.

PARTICIPATING CENTERS:

ARC ____ LaRC ____ GSFC ____
LeRC _X_ JPL ____
MSFC ____ JSC ____ SSC ____
KSC ____ HQ ____

NUMBER OF PARTICIPANTS: 250/month approximately

COST (FY 1987): $10,000 approximately

FUNDING ORGANIZATION: Headquarters Office of External Affairs

PROGRAM: Educational Programs for the Handicapped

LEVEL: All levels

DESCRIPTION:

Available at the Lewis Research Center are Braille materials and captioned videotapes related to NASA's programs and activities. Produced materials are made available to all Teacher Resource Centers.

PARTICIPATING CENTERS:

ARC ____
MSFC ____
LeRC X
KSC ____
LaRC ____
JSC ____
JPL ____
HQ ____
GSFC ____
SSC ____

NUMBER OF PARTICIPANTS: Several thousand

COST (FY 1987): $10-20,000/year

FUNDING ORGANIZATION: Headquarters Educational Affairs Division

* * *

PROGRAM: Educational Satellite Broadcast

LEVEL: General Public

DESCRIPTION:

Interactive Educational Satellite Broadcast showing the Kennedy Space Center facilities and operations. Center personnel demonstrate the science concepts and activities of the center.

PARTICIPATING CENTERS:

ARC ____
MSFC ____
LeRC ____
KSC X
LaRC ____
JSC ____
JPL ____
HQ ____
GSFC ____
SSC ____

PROGRAM: Educational Television

LEVEL: All levels

DESCRIPTION:

Weekly educational television programs are produced at the Lewis Research Center and distributed by Southern Education Communications Association (SECA) via satellite across the United States. Programs cover a variety of NASA topics and activities. Many of the programs are also copied and made available to Teacher Resource Centers.

PARTICIPATING CENTERS:

ARC _____
MSFC _____
LeRC X
KSC _____
LaRC _____
JSC _____
JPL _____
HQ _____
GSFC _____
SSC _____

NUMBER OF PARTICIPANTS: Millions

COST (FY 1987): $60,000 approximately

FUNDING ORGANIZATION: Lewis Research Center

* * *

PROGRAM: Goddard Space Flight Center Film Distribution

LEVEL: General Public

DESCRIPTION:

This film distribution program from the Goddard Space Flight Center services 12 states on the east coast. Films are color 16mm. The majority of the films are loaned to educational facilities, and are also loaned at no cost to civic, professional, youth groups, and private industry.

PARTICIPATING CENTERS:

ARC _____
MSFC _____
LeRC _____
KSC _____
LaRC _____
JSC _____
JPL _____
HQ _____
GSFC X
SSC _____

PROGRAM: Public Inquiries Program

LEVEL: General Public

DESCRIPTION:

The program, in cooperation with the Omega Group, Inc., plans, directs, and coordinates the agency-wide public mail program, maintaining a responsive, effective public mail answering operation.

PARTICIPATING CENTERS:

ARC ____
MSFC ____
LeRC ____
KSC ____
LaRC ____
JSC ____
JPL ____
HQ __X__
GSFC ____
SSC ____

COST (FY 1987): $90,000

* * *

PROGRAM: Special Educational Programs

LEVEL: Elementary, Secondary, Teachers, General Public

DESCRIPTION:

The Lewis Research Center Educational Services Office participates with orchestras, schools, theaters, and museums to cosponsor educational programs. Some of the programs include Cosmic Concerts, A Midsummer Night's Dream set in space, partnerships in education, and simulated Shuttle missions.

PARTICIPATING CENTERS:

ARC ____
MSFC ____
LeRC __X__
KSC ____
LaRC ____
JSC ____
JPL ____
HQ ____
GSFC ____
SSC ____

NUMBER OF PARTICIPANTS: 10,000 approximately

PROGRAM: Technical Library

LEVEL: General Public

DESCRIPTION:

The Langley Research Center Library has color films, slides, and videotapes describing various NASA research and development programs and achievements in space. The materials may be borrowed for showings to education, civic, industrial, professional, youth, and similar groups. There is no rental fee.

PARTICIPATING CENTERS:

ARC ______ LaRC __X__ GSFC ______
LeRC ______ JPL ______
MSFC ______ JSC ______ SSC ______
KSC ______ HQ ______

INDEX

Academic Part-Time Program, 132

Adopt-A-School, 21

Aerospace Education Services Program, 13

Aerospace Fellows, 103

Aerospace History Fellowship, 57

Aerospace Summer Intern, 133

Associated Western Universities, 70

Audiovisual Loans, 145

Baccalaureate Cooperative Education Program, 125

Brevard County Job Corps, 104

Caltech Summer Undergraduate Research Fellowship (SURF), 70

Career Programs, 149

Case-NASA Cooperative Aerospace R&D Internship/Fellowship Program, 71

Centers for the Commercial Development of Space, 57

Childrens Science Conference, 26

CHROME, 27

Clinical and Research Aspects of Aerospace Medicine (Medical Students), 71

Clinical and Research Aspects of Aerospace Medicine (Residents), 61

College Lectures on Aeronautics and Space Science, 58

College Work Study Program, 62

Comfortable Approach to Teaching Science (CATS), 28

Community Involvement Program, 13

Computer Bulletin Board System, 28, 149

Conference and Workshop Support, 4

Cuyahoga Community College Pre-Engineering, 29

Educational Conferences, 14

Educational Dissertations, 30

Educational Programs for the Handicapped, 30, 150

Educational Satellite Broadcasts, 15, 150

Educational Television, 31, 151

El Ingeniero, 89

Elementary and Middle School Science Improvement Program, 32

Engineering and Pre-Engineering, 33

Engineering Concepts Institute, 105

Engineering Enrichment Program, 106

Engineering Student Groups, 60

Engineering Technician Cooperative Education Program, 126

Explorer Post Sponsorship , 22

Exploration Station, 33

External Experience for Students in the NIH-Sponsored Minority Access to Research Careers (MARC) Program, 106

Federal Junior Fellowship Program, 127

Foothill DeAnza Community College District Professional Office Careers Program, 133

Fund for Independent Research, Fund for Innovative Research , 58

Galileo Summer Fellowships, 34

Get-Away Special , 22

Girl Scouts Program, 34

Graduate Cooperative Education Program, 128

Graduate Degrees for Minorities in Engineering (GEM), 98

Graduate Program for Aeronautics, 62

Graduate Research Development Program, 90

Graduate Student Researchers Program, 63

Graduate Student Researchers Program (Underrepresented Minority Focus), 99

GSFC Film Distribution, 15,72,151

Harvey Mudd Math and Engineering Clinic; Claremont Graduate School Math Clinic, 134

Head Start Educators Program, 107

High School Space and Biology Program, 35

Historically Black Colleges and Universities, 100

Hypersonic Training Grants , 59

In-Space Technology Experiments Outreach Program, 59

Intergovernmental Personnel Act Program (IPA), 63

Introduction to Space Sciences for Middle School and Junior High School Students, 35

Joint University Institutes , 64

JPL/MESA Space Station Competition , 36

Langley Aerospace Research Summer Scholars (LARSS), 72

Lincoln University Aerospace Engineering Recruitment (LASER) , 108

Loan of Equipment to Universities, 64

Lunar Sample Education Program, 16

Massachusetts Institute of Technology Engineering Internship Program, 134

Materials of Instruction Program, 17, 145

Math/Science/Business Summer Teacher Program, 37

MATHCOUNTS, 16

Mathematics and Engineering Science Achievement (MESA), 109

Memoranda of Understanding Between NASA Centers and Universities, 61

Mini-Courses - Secondary School Students, 23

Mini-Courses - Secondary School Teachers, 17

Minority Engineering Student Orientation Day, 110

NASA/ASEE Summer Faculty Fellowship Program, 65

NASA Governor's School for the Gifted, 38

NASA Orbiter-Naming Program, 17

NASA Spacelink, 18

NASA/University Advanced Design Program, 66

NASA/Virginia Polytechnic Institution and State University (VPI) Composities, 73

NASA's Unique Resident Tutoring for Up-and-Coming Replacement Engineering (NURTURE), 111

National Space Club Scholars Program for High School Students, 39

New Horizons Technical Center Mentorship, 40

New Horizons Vocational Mentorship, 40

New View, 135

NEWEST, 23

NEWMAST, 18

OAST Centers of Excellence, 67

OAST Research Institutes, 68

Parent Education Teleworkshops, 91

Physical Science and Engineering Internship for Senior High School Students, 41

Planetarium Support, 24, 146

Planetary Geology Undergraduate Researcher Program, 73

Pre-College Cooperative Education Program (Pre-Co-op), 129

Promotion and Awareness of Careers in Engineering (PACE), 91

Public Inquiries Program, 152

Public Service Intern Program (PSI), 111

Publications, 19, 61, 146

Recruitment & Retention for Excellence in Engineering, 92

Research Affiliates, 74

Resident Research Associateship Program, 69

San Jose State University/NASA Ames Research and Development Program, 74

Science and Engineering Fairs, 24

Science and Mathematics Teaching Resource Center, 41

Science Connection, 42

Science Olympiad, 42

Secretarial Science Cooperative Educational Program, 129

SEEDS Project, 25

Skilled Trades Experience Program, 75

Space Applications Program, 60

Space Science Student Involvement Program (SSIP), 25

Space Life Sciences Training Program, 76

Speakers Bureau, 147

Special Education Programs, 43, 152

St. Andrews College Program for the Handicapped, 77

Stay-In-School Program, 130

Stevens Middle School Math and Science Program, 93

Student Career Education, 19

Student Research Assistance, 19

Summer Aide Program, 130

Summer Employment for the Handicapped, 136

Summer Employment Program, 131

Summer Graduate Intern Program, 112

Summer High School Apprenticeship Research Program (SHARP), 101

Summer Institute for Computer Simulation Network (SIMNET), 102

Summer Institute in Computer Applications, 113

Summer Minority High School Program, 114

Summer Program for Handicapped College Students, 137

Summer Work Experience Program for Technology/ Vocational Education Teachers, 43

Teacher Conferences and Symposia on Center, 44

Teacher Resource Centers, 20

Teacher Written Request for Space Information, 44

Teachers' In-Service Workshops, 20

Technical Library, 153

Technical Opportunities for Peninsula Students (TOPS), 45

Telelecture Program, 26, 148

University of DC Saturday Academy, 94

Upward Bound Program, 115

Urban Community
Enrichment Program, 95

Use of Laboratory
Facilities, 69

Visitors Information
Centers and Tours, 147

Volunteer Service Program, 131

Work Engagement for
Scientific Technicians, 77

Worker Trainee
Opportunity Program, 137

Workshops for Teachers
from American Indian
Schools, 96

Xavier University
Engineering Bridge
Program, 97

Youth Programs and Visits, 21, 148